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ABSTRACT

This curriculum guide is intended to assist vocational instructors in preparing students for entry-level employment in the graphic arts field and getting them ready for advanced training in the workplace. The package contains an overview of new and emerging graphic arts technologies, competency/skill and task lists for the occupations of lithographic sheet-fed operator and lithographic platemaker, instructor's guides for units on these occupations, and an annotated bibliography. The following competencies are covered in the section on lithographic sheet-fed operators: consulting job tickets and organizing work flow, mounting plates, inspecting and preparing press systems, operating a press, troubleshooting, and performing maintenance and related duties. The following competencies are covered in the section on lithographic platemakers: consulting job tickets and organizing work flow; exposing, processing, and preserving presensitized additive and subtractive plates and other plate materials; repeating plate exposure; troubleshooting; and performing maintenance and other duties. The instructor's guide consists of a series of task sheets, each of which includes some or all of the following: competency/skill statement; task statement; performance objectives (including conditions in which the task is to be performed, evaluation criteria, and an evaluation standard); suggested student learning experiences; recommended instructional techniques; instructional equipment, materials, and supplies needed to complete the lesson; and recommended resources. (MN)

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GRAPHIC ARTS

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GRAPHIC ARTS

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September, 1987

FOREWORD

The Graphic Arts Curriculum Guides for Lithographic Sheet-fed Press Operator and Lithographic Platemaker have been designed to assist instructors in preparing students for entry-level employment in these job descriptions and readying them for success in the workplace and in advanced training.

The guides are based on the Arizona Validated Competencies and Tasks for Graphic Arts. A committee of Community College Instructors, High School Instructors and Printing Industry Representatives met and revised these competencies, selecting those with potential job market growth in Arizona which can be taught for the entry-level worker. These nine jobs were then prioritized by demand as follows:

Priority one: Lithographic Sheet-fed Press Operator

Priority two: Lithographic Platemaker

Priority three: Stripper

Priority four: Phototypesetter Operator

Priority five: Paste-up/copy Preparation Artist

Priority six: Screen Process Stencil Maker/Printer

Priority seven: Graphic Arts Camera Operator/Reproduction Photographer

Priority eight: Graphic Designer/Layout Artist

Priority nine: Bindery/Finishing Worker

These priorities were established with the consideration of job demand and availability in the state of Arizona. The position in priority for Lithographic Platemaker and Stripper were determined by the different skill groupings found in the varied work environments in the printing industry. A commercial printing business is usually large enough to employ full-time workers to function as platemakers or strippers; quick print and in-plant shops often require these tasks to be performed by the Press Operator, Paste-up/Copy Prep Artist or the Graphic Arts Camera Operator. These skills were placed second and third in priority because the vast majority of entry-level job openings are in the quick print and in-plant work environments.

Competencies and tasks in the Arizona validated document were carefully studied and, in some cases, revised or consolidated. Every effort was made to ensure a curriculum guide that is comprehensively structured to related to the successful performance of these job skills in the workplace.

ACKNOWLEDGMENTS

The thoughtful consideration, revision, writing and draft review of these Graphic Communications Curriculum Guides was a team effort of the Graphic Communications Curriculum Committee. Members of the Committee are:

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Bev Burns, Equity Specialist with New Frontiers, reviewed the curriculum and checked for equity. Special thanks go to Barbara Watson for her expertise in solving computer program problems and for providing data input services.

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NEW AND EMERGING TECHNOLOGIES IN GRAPHIC ARTS

The next twenty years will bring many changes to the designer's studio, the print shop and the in-plant production facility. Most of these changes will be due not to any radical, soon-to-be discovered earth-shaking breakthroughs in basic technologies, but to the ever quickening pace of computerization and systems based automation of existing technologies as the implosion of microprocessor technologies sharply reduces their unit acquisition cost compared to their increasing unit productivity.

This process will undoubtedly have many unpredictable consequences, but several broad trends are unmistakable and have already made significant impacts in the workplace.

Design and Pre-press:

Computer assisted design (CAD) and computer assisted manufacturing (CAM) of graphic art images and pre-press materials (color proofs, image masks and printing plates) points toward a future perhaps not too distant when the techniques (and job skills!) of photo-mechanical assembly such as paste-up, flat stripping and manual platemaking will be obsolete, and the knife and t-square will be exhibits in the Museum of Graphic Art History.

Desk-top publishing and desk-top graphic design systems for the personal computer are beginning to have a major impact on internal communications for business and education, and these technologies could merge with the more sophisticated CAD/CAM systems as the capabilities and economies of computer technologies continue to develop.

Printing Processes:

Offset lithography seems sure to be a major force in the shop for a long time to come, but recent developments in gravure are lowering its start-up cost and may in time make it economically feasible for relatively short-run printing. Computer driven processes such as laser and ink jet are booming because of their quick make-ready times and personalized message capabilities, and the direct electronic delivery of graphic images may supplant some forms of specialized printing such as shoppers catalogs and newspapers.
Offset presses of all sizes will se increased use of on-board microprocessors to monitor work output and control press adjustments, especially in the small to mid size range.

Post-Press:

The high-tech revolution in automated, on-line bindery and finishing systems for the mid-sized and small printer is already purring substantial market pressure on trade binderies as printers try to add services and flexibility for their customers. This trend will undoubtedly continue, creating a need for a more highly trained, technologically sophisticated worker to meet the demands of maintaining automated production with its faster pace and higher level of stress.

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COMPETENCY/SKILL AND TASK LIST GRAPHIC COMMUNICATIONS
LITHOGRAPHIC SHEET-FED OPERATOR

1. **Consults job ticket and organizes work flow:**
   - (1.1) Sorts plate(s) to be used.
   - (1.2) Arranges plates in a production sequence.
   - (1.3) Inspects plates for defects.
   - (1.4) Organizes necessary press supplies and paper; mixes chemicals.

2. **Mounts plates:**
   - (2.1) Creates bend or punch if necessary.
   - (2.2) Mounts plates according to press specifications.

3. **Inspects and makes-ready press systems:**
   - (3.1) Adjusts paper feed systems
   - (3.2) Prepares and adjusts dampening system(s).
   - (3.3) Prepares and adjusts inking system(s).
   - (3.4) Prepares and adjusts printing unit(s).
   - (3.5) Adjusts register system.
   - (3.6) Adjusts delivery system.

4. **Operates press:**
   - (4.1) Consults job ticket and creates pressroom dummy.
   - (4.2) Prints test images and adjusts as necessary.
   - (4.3) Obtains "OK" from supervisor.
   - (4.4) Runs job, maintaining level of quality to meet specifications.
   - (4.5) Evaluates and maintains register.
   - (4.6) Evaluates and maintains ink-water balance and pH.
   - (4.7) Evaluates and maintains even transfer and impression pressures.
   - (4.8) Evaluates and maintains color and color balance.
   - (4.9) Evaluates and maintains trapping.
   - (4.10) Evaluates and maintains plate image quality.
   - (4.11) Evaluates and avoids set-off.
   - (4.12) Evaluates and maintains productivity.

5. **Performs troubleshooting:**
   (5.1) Identifies problem.
   (5.2) Analyzes problem.
   (5.3) Selects best solution.
   (5.4) Implements solution.
   (5.5) Evaluates and accepts or rejects results.

6. **Performs maintenance:**
   (6.1) Cleans and lubricates on scheduled basis and as necessary.
   (6.2) Accomplishes minor repairs.
   (6.3) Maintains a neat, clean and safe working environment.

7. **Performs related duties:**
   (7.1) Communicates and coordinates work with other production workers.
   (7.2) Maintains inventory of necessary supplies and materials.
   (7.3) Coordinates, if necessary, work of assistant press operators.
   (7.4) Demonstrates responsibility for press production and quality control.

1.0 **COMPETENCY/SKILL:** . Consults job ticket and organizes work flow.

1.1 **TASK:** Sorts plate(s) to be used.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given the job ticket for a specific printing job and a file of offset plates,

EVALUATION: sorts plate(s) to be used.

STANDARD: All plates needed to produce the job will be selected; no unnecessary plate(s) will be selected.

STUDENT LEARNING EXPERIENCES:

1. Describe the content and function of a typical printing business job ticket.

2. Describe the design and usage of printing labeling and handling.

3. Show the proper techniques for plate labeling and handling.

4. Practice the identification and selection of printing plates from a plate filing system based on job ticket information.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the specifications contained in printing job tickets, the organization and use of plate filing systems to store and retrieve the plates that are necessary to print specific jobs, and the different techniques that are used to label individual plates and whole plate files. Have the class discuss this information and how it relates to the efficient and accurate performance of this task in the workplace.

2. Write up job tickets and create mock-up plate files for existing printed samples. Have group members combine and label these files to create a plate filing system. Exchange job tickets and have group members locate files based on job ticket information and sort the plates in these files. Mock-up files may include extra, mis-filed or missing plates to help train observation and identification skills.

3. Create and maintain a separate file of student project plates or contribute to a classroom file of project plates. Require each student to utilize this file in the production of student projects or upon instructor request in an accurate and efficient manner.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

A supply of blank printing job tickets of a representative commercial style, printing plates from current or past printing jobs, black felt markers and folded cover stock or other materials used to create horizontal or vertical plate files.

RESOURCES:

1.0 **COMPETENCY/SKILL:** Consults job ticket and ogranizes work flow.

1.2 **TASK:** Arranges plates in a production sequence.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given the job ticket for a specific printing job and the sorted offset plates necessary to print the job,

EVALUATION: arranges plates in a production sequence.

STANDARD: The offset plates will be arranged in a logical sequence based on grouping by front and back sides of the same press sheet, colors of ink being used, ink coverage and drying time of a specific press sheet side, or grouping of press sheet signatures for the bindery.

STUDENT LEARNING EXPERIENCES:

1. Describe and explain the production criteria and workflow factors in the job tickets of specific printing jobs and how this information affects the choice of a production sequence.

2. Create a production schedule for a specific printing job based on job ticket criteria, pressroom work schedules and a known production deadline.

3. Arrange groups of plates for specific printing jobs using logical principles incorporating job ticket information and all other factors affecting production; explain this production sequence to the instructor.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on production scheduling, the time and quality considerations involved in the technical information of specific printing jobs such as press set-ups for register, press wash-ups for color, drying and turn-around times for backing-up press sheets, and bindery schedules for work on jobs-in-progress. Review the principles of logical thought and how they may be applied to the decision making process. Have the class discuss this information and how it relates to the efficient and accurate performance of this task in the workplace.

2. Create production schedules for several different printing jobs based on job ticket information and the technical considerations implied. The schedule should include estimates of presstime for different press runs and completion deadline. Have small class groups present and explain these production schedules to the whole class.

3. Arrange the offset plates necessary to produce a specific printing job into a production sequence. Have student explain and justify this arrangement to the instructor. Follow this procedure for all of the plates used in each student production project.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

A supply of job tickets and offset plates necessary for the production of specific printing jobs, and, if possible, press sheets and finished samples of those jobs.

RESOURCES:

1.0 **COMPETENCY/SKILL:** Consults job ticket and organizes work flow.

1.3 **TASK:** Inspects plates for defects.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given the plate(s) needed to produce a specific printing job and a measuring tool magnifier,

EVALUATION: inspects plates for defects.

STANDARD: All plate(s) with defects will be identified; those not salvageable will be removed for re-make.

STUDENT LEARNING EXPERIENCES:

1. List and describe all of the possible defects of image quality and image position that can occur during the production and use of offset printing plates. Explain the effect that undetected defects have on quality control and production scheduling of specific printing jobs.

2. List and describe defects of plate position that can and those that cannot be compensated for on a specific offset press; list and describe defects of plate image quality that can and those that cannot be corrected on different specific types of plate material.

3. Examine and correctly identify image defects of existing inventories of different types of prepared offset plates.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the defects of image position and quality that can occur during platemaking and plate use; include specific examples of actual offset plates with these defects and press sheet samples printed from these plates that show the results of these defects. Show the effect on a production schedule of having to pull and re-make plates after production has begun. Have the class discuss this information and how it relates to the efficient and accurate performance of this task in the workplace.

2. Inspect samples of defective offset plates with a measuring tool and magnifier and list the defects found and the proper action necessary to correct them. Have small groups present findings to the whole class and answer questions about their decisions.

3. Inspect the offset plates necessary to produce a specific printing job, list the defects found and make recommendations for corrective action. Have student explain and justify performance to the instructor. Follow this procedure for all of the plates used in each student production project.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

Measuring tools, magnifiers, a supply of offset plates from printing jobs with image and position defects representative of all possibilities that are known to occur in platemaking and plate use.

RESOURCES:

1.0 **COMPETENCY/SKILL:** Consults job ticket and organizes work flow.

1.4 **TASK:** Organizes necessary press supplies and paper; mixes chemicals.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given access to the storage areas for press supplies, paper and chemicals, and graduated cylinder,

EVALUATION: organizes necessary press supplies and paper; mixes chemicals.

STANDARD: All necessary press supplies and paper will be assembled at the press; all chemicals will be mixed, diluted and buffered to label specifications.

STUDENT LEARNING EXPERIENCES:

1. List all of the press supplies, paper and chemicals necessary to produce a specific printing job on a particular offset press; list by type of supply, paper and chemical specification and estimate of quantities needed for production.

2. Examine label specifications for all necessary press supplies and chemicals. Review all safety precautions and procedures for product use.

3. Withdraw from storage, inventory all necessary supplies, paper and chemicals. Mix, dilute and buffer fountain solution, ink and other required solutions. Assemble and arrange these materials at the press work area in an orderly fashion.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present a listing of the inventory of press supplies, paper and chemicals maintained by the instructor in the classroom and indicate those necessary for the production of a specific printing job on a particular offset press. Present information to the class on the correct and efficient use of these materials, their cost and the amount of these materials needed to produce a specific printing job. Have the class discuss this information and how it relates to the efficient and accurate performance of this task in the workplace.

2. Review the label specifications of necessary supplies and chemicals for proper handling, mixing and safety procedures and precautions. Have small groups present this information to the whole class and demonstrate procedures based on this information.

3. Assemble the necessary supplies, paper and chemicals for a specific printing job. Each student will mix all chemical solutions and arrange all materials in preparation for production. Review these preparations for correctness. Follow this procedure for all student production projects.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

An inventory of press supplies, paper and chemicals necessary to the production of specific printing jobs on a particular offset press.

RESOURCES:

Hartsuch, Paul J. CHEMISTRY FOR THE GRAPHIC ARTS Graphic Arts Technical Foundation, Pittsburg, PA., 1979.

Principato, Mike. A QUESTION OF SAFETY: TOXIC CHEMICALS IN THE PRESSROOM Vol. 198, No 6; pp. 52-53 American Printer; Maclean Hunter publishing Corporation, Chicago, IL., 1987.

Geis, John A. CONTROLLING THE QUALITY OF PRESSROOM MATERIALS Graphic Arts Technical Foundation, Pittsburg, PA., 1980.

DeJidas, Lloyd P. and Levenson, Harvey R. MAINTAINING PRODUCTION WITH SUBSTITUTE MATERIALS Graphic Arts Technical Foundation, Pittsburg, PA., 1974.

2.0 **COMPETENCY/SKILL:** Mounts plates.

2.1 **TASK:** Creates bend or punch if necessary.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given an offset plate for a particular press, the press manual and the required tools,

EVALUATION: creates bend or punch if necessary.

STANDARD: The bend or punched holes will be in the specified position as measured from the edges of the plate.

STUDENT LEARNING EXPERIENCES:

1. List the types of offset plates which may be used with a particular offset press and review the press manual of that press for specific information on the proper preparation of each type of plate for mounting on the plate cylinder.

2. Bend or punch practice plates to the specifications of the press manual for the particular offset press.

3. Identify printing project plates by type and create the appropriate bend or punch to specifications for correct plate mounting.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the types of offset plates which may be used with a particular offset press and review the data in the press manual on the proper preparation of each type of plate for mounting. Explain how improper plate preparation affects successful mounting of each type of plate. Have the class discuss this information and how it relates to the efficient and accurate performance of this task in the workplace.

2. Bend or punch practice plates of each type to the specifications of the press manual for the particular offset press and submit these plates to the instructor for evaluation.

3. Identify the type of offset plates used in student printing projects, consult the press manual and create the appropriate bend or punch, if necessary. The instructor will review this preparation for correctness. Follow this procedure for all student production projects.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

A supply of practice plates and student project plates, the press manual for a particular offset press, the appropriate plate punch or plate bending tool required to punch or bend the plates.

RESOURCES:

Smith, Paul G. PLATE MOUNTING ON THE OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1985

2.0 **COMPETENCY/SKILL:** Mounts plates.

2.2 **TASK:** Mounts plates according to press specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, a plate for that press, the press manual and the required tools,

EVALUATION: mounts plates according to press specifications.

STANDARD: The mounted plate will be in the specified position, undamaged, flush to and secure on the plate cylinder.

STUDENT LEARNING EXPERIENCES:

1. Describe the type(s) of offset press used in the training environment, the type(s) of offset plates that may be used with these press units, the tools necessary to accomplish the correct mounting of these plates and the procedure outlined in the press manual for the particular press(es). Explain the problems that can occur which interfere with the correct mounting of the offset plate and describe the kinds of plate damage which can result from these problems.

2. Mount different types of offset plates onto the plate cylinders of available offset presses and evaluate the results.

3. Identify the mounting requirements of printing project plates and correctly mount them without damage during printing project production.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the type(s) of offset press used in the training environment, the type(s) of plates used, the tools necessary to mount these plates, and the correct procedure as outlined in the press manual for the particular press(es). Demonstrate the problems which can occur during plate mounting and show the kinds of plate damage which can occur. Have the class discuss this information and how it relates to the efficient and accurate performance of this task in the workplace.

2. Mount different types of offset plates onto the plate cylinders of the different type(s) of offset press(es) available in the training environment. Review the results for correctness.

3. Identify the correct procedure and tools necessary for mounting printing project plates and mount plates for all printing projects onto the plate cylinders of the particular offset press being used. Evaluate the results.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

A supply of practice plates and student project plates, the particular offset press(es) and manual(s), the necessary tools required for plate mounting.

RESOURCES:

Smith, Paul G. PLATE MOUNTING ON THE OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1985

3.0 **COMPETENCY/SKILL:** Inspects and makes-ready press systems.

3.1 **TASK:** Adjusts paper feed systems.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, one type, weight and size of paper stock, the press manual and the necessary tools,

EVALUATION: adjusts paper feed systems.

STANDARD: The paper will feed freely and without interruption, one sheet at a time, down the approximate center of the paper path.

STUDENT LEARNING EXPERIENCES:

1. Describe the techniques of printing paper manufacture and the different mechanical characteristics of types and weights of paper stock that affect their running ability in offset press feed systems.

2. Name the parts of the particular offset press paper feed system and describe the design, function and method of adjustment of those press components.

3. Use basic arithmetic calculation to find the center of sheets of paper stock and the center of paper feed paths.

4. Display adequate manual dexterity and fine motor coordination in the adjustment and manipulation of press parts and adjustments.

5. List the general safety procedures designed to protect the body from crushing injuries; prevent hair, clothing and jewelry from becoming entangled in the press; location of switches and function of automated safety systems; and procedures to be followed in the event of an accident.

6. Practice adjustment of the particular offset press paper feed system to meet the standard with a variety of printing papers.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on printing paper manufacturing and mechanical characteristics; paper feed systems nomenclature for the particular offset press, function of those parts; the general and specific safety procedures and behaviors to be followed at the press. Have the class discuss this information and how it relates to the performance of the task in the workplace.

2. Demonstrate at the press the appropriate safety behaviors; location and function of press paper feed system components; handling and mechanical properties of printing papers; adjustment, sequencing and observation analysis of the task performance. Have each member of the group repeat these activities "hands-on".

3. Perform skill practice at the particular offset press with different types, weights and sizes of paper stock and compare the performance against the standard.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all necessary tools and a representative variety of different types, weights and sizes of printing paper stock.

RESOURCES:

Bureau, William H. WHAT THE PRINTER SHOULD KNOW ABOUT PAPER Graphic Arts Technical Foundation, Pittsburg, PA., 1982

Grace, Gregory W. SHEET CONTROL FOR A SMALL LITHOGRAPHIC OFFSET PRESS Graphics Arts Technical Foundation, Pittsburg, PA., 1978

Smith, Paul G. PLATE MOUNTING ON THE OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1985

Walker, John R. GRAPHICS ARTS FUNDAMENTALS The goodheart-Willcox Company, Inc., South Holland, IL, pp. 128-129, 137-139, 1986

3.0 **COMPETENCY/SKILL:** Inspects and makes-ready press systems.

3.2 **TASK:** Prepares and adjusts dampening system(s).

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the necessary supplies and chemicals, the press manual and the necessary tools,

EVALUATION: prepares and adjusts dampening system(s).

STANDARD: All dampening covers will be in good condition and properly fitted; all dampening rollers will be in the correct position, properly pressured; all dampening form rollers will have level and proper pressure; dampening fountain(s) will be clean and free from lint and mold, water stops clean and properly adjusted.

STUDENT LEARNING EXPERIENCES:

1. Describe the function of offset press dampening systems in the formation of the lithographic image.

2. Name the parts of the particular offset press dampening system and describe the design, function and methods of adjustment of those press components.

3. List the supplies and chemicals necessary to maintain and use the particular press dampening system.

4. List the tools necessary to adjust the particular press dampening system.

5. List the general safety procedures designed to protect the body from crushing injuries; prevent hair, clothing and jewelry from becoming entangled in the press; location of switches and function of automated safety systems; and procedures to be followed in the event of an accident.

6. Practice preparation and adjustment of the particular offset press dampening system(s) to meet the standard.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the function of dampening systems in the lithographic printing process; name parts and detail the function of the dampening system(s) of the particular offset press(es) in the training environment; list the supplies, chemicals and tools required to prepare and adjust the dampening system(s). Review the general and specific safety procedures and behaviors to be followed at the press. Have the class discuss this information and how it relates to the performance of this task in the workplace.

2. Demonstrate at the press the appropriate and safe techniques for preparation and adjustment of the press dampening system(s), including installation of dampener roll covers, steel roll cleaning and conditioning, fountain preparation and roll pressure adjustment with an observation analysis of the task performance. Have each member of the group repeat these activities "hands-on".

3. Prepare and adjust the particular press dampening system(s) as needed in the production of student printing projects with the instructor monitoring and evaluating student performance.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, necessary dampening system(s) supplies and chemicals, and the tools necessary for adjustment.

RESOURCES:

German, Charles R. PRINTING WITH A SMALL LITHOGRAPHIC OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1980.

Walker, John R. GRAPHIC ARTS FUNDAMENTALS The Goodheart-Willcox Company, Inc. South Holland, IL., pp. 133-134, 143, 1986.

Porter, A.S. LITHOGRAPHIC PRESSWORK Graphic Arts Technical Foundation, Pittsburt, PA., 1980.

STAFF AUTHOR, PRESSROOM: CATCHUP SCUM CAN BE ELIMINATED ON AN OFFSET PRESS BY ADDING MOISTURE AND TAKING PROPER CARE OF COMPONENTS American Printer; Maclean Hunter Publishing Corporation, Chicago., IL., Vol. 198, No. 3; pg. 106, 1986.

3.0 **COMPETENCY/SKILL:** Inspects and makes-ready press systems.

3.3 **TASK:** Prepares and adjusts inking system(s).

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the necessary supplies and chemicals, the press manual and the necessary tools,

EVALUATION: prepares and adjusts inking system(s).

STANDARD: All inking rollers will be clean and in good condition; all inking rollers will be in the correct position, properly pressured; all inking form rollers will have level and proper pressure; ink fountains will be clean, fountain blades in good condition, fountain keys properly adjusted.

STUDENT LEARNING EXPERIENCES:

1. Describe the function of the offset press inking systems in the formation of the lithographic image.

2. Name parts of the particular offset press inking system and describe the design, function and methods of adjustment of those press components.

3. List the supplies and chemicals necessary to maintain and use the particular press inking system.

4. List the tools necessary to adjust the particular press inking system.

5. List the general safety procedures designed to protect the body from crushing injuries; prevent hair, clothing and jewelry from becoming entangled in the press; location of switches and function of automated safety systems; and procedures to be followed in the event of an accident.

6. Practice preparation and adjustment of the particular offset press inking system(s) to meet the standard.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the function of inking systems in the lithographic printing process; name the parts and detail the function of the inking system(s) of the particular offset press(es) in the training environment; list the supplies, chemicals and tools required to prepare and adjust the inking system(s). Review the general and specific safety procedures and behaviors to be followed at the press. Have the class discuss this information and how it relates to the performance of this task in the workplace.

2. Demonstrate at the press the appropriate and safe techniques for preparation and adjustment of the press inking system(s), including the cleaning and surface maintenance of rolls, roll pressure adjustment, ink fountain blade removal and cleaning, and fountain key adjustment with an observation analysis of the task performance. Have each member of the group repeat these activities "hands-on".

3. Prepare and adjust the particular press inking system(s) as needed in the production of student printing projects with the instructor monitoring and evaluating student performance.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, necessary inking system(s) supplies, chemicals and ink, and the tools necessary for adjustment.

RESOURCES:

Crowhurst, Les and Burton, Peter SMALL OFFSET: PREPARATION AND PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1983.

Hull, Harry H. CONTROLLING INK DISTRIBUTION IN LITHOGRAPHY AND LETTERPRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1972

Scarlett, Terry and Eldred, Nelson WHAT THE PRINTER SHOULD KNOW ABOUT INK Graphic Arts Technical Foundation, Pittsburg, PA, 1984.

Walker, John R. GRAPHIC ARTS FUNDAMENTALS The Goodheart-Willcox Company, Inc., South Holland, IL., pp. 132-133, 141-142, 1986.

3.0 **COMPETENCY/SKILL:** Inspects and makes-ready press systems.

3.4 **TASK:** Prepares and adjusts printing units.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the necessary supplies and chemicals, the press manual and the necessary tools,

EVALUATION: prepares and adjusts printing unit(s).

STANDARD: Offset blankets will be in good condition and properly packed; impression cylinder will be clean; plate-to-blanket contact will be level and at proper pressure; all head stops, feed rolls, impression trips, grippers and paper sensors will be clean and properly adjusted.

STUDENT LEARNING EXPERIENCES:

1. Describe the function of offset press printing units in the formation and transfer of the lithographic image.

2. Name parts to the particular offset press printing unit(s) and describe the design, function and methods of adjustment of those press components.

3. List the supplies and chemicals necessary to maintain and use the particular press printing unit(s).

4. List the tools necessary to adjust the particular press printing unit(s).

5. List the general safety procedures designed to protect the body from crushing injuries; prevent hair, clothing and jewelry from becoming entangled in the press; the location of switches and function of automated safety systems; and procedures to be followed in the event of an accident.

6. Practice preparation and adjustment of the particular offset press printing unit(s) to meet the standard.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the function of printing units in lithographic printing process; name parts and detail the function of the printing unit(s) of the particular offset press(es) in the training environment; list the supplies, chemicals and tools required to prepare and adjust the printing unit(s). Review the general and specific safety procedures and behaviors to be followed at the press. Have the class discuss this information and how it relates to the performance of this task in the workplace.

2. Demonstrate at the press the appropriate and safe techniques for preparation and adjustment of the printing unit(s), including the cleaning, evaluation of blanket condition; replacement and packing of the offset blanket; evaluation and adjustment of plate-to-blanket and impression pressures; function of any automated sensor systems for printing control, with an observation analysis of the task performance. Have each member of the group repeat these activities "hands-on".

3. Prepare and adjust the particular press printing unit(s) as needed in the production of student printing projects with the instructor monitoring and evaluating student performance.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, offset blankets for those presses, other necessary printing unit supplies and chemicals, and the necessary tools for adjustment.

RESOURCES:

Benevento, Frank S. CYLINDER ALIGNMENT AND ADJUSTMENTS Graphic Arts Technical Foundation, Pittsbur, PA., 1970.

Benevento, Frank S. OFFSET PRESS CYLINDER PACKING Graphic Art-Technical Foundation, Pittsburg, PA., 1970.

Benevento, Frank S. PRINTING UNIT CONFIGURATIONS Graphic Arts Technical Foundation, Pittsburg, PA., 1970.

Benevento, Frank S. THE OFFSET PRINTING UNIT Graphic Arts Technical Foundation, Pittsburt, PA., 1970.

Walker, John R. GRAPHIC ARTS FUNDAMENTALS The Goodheart-Willcox Publishing Company, Inc., South Holland, IL., pp. 134-135, 1986.

3.0 **COMPETENCY/SKILL:** Inspects and makes-ready press systems.

3.5 **TASK:** Adjusts register system.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket, one type, weight and size of paper stock, the press manual, and the necessary tools,

EVALUATION: adjusts register system.

STANDARD: The press will register each sheet to the same position relative to the image on the offset plate as specified by the information on the job ticket.

STUDENT LEARNING EXPERIENCES:

1. Describe the function of the offset press register system in the positioning of press sheets relative to the image on the offset plate mounted on the plate cylinder.

2. Name parts of the particular offset press register system and describe the design, function and methods of adjustment of those press components.

3. List the tools necessary to adjust the particular press register system.

4. List the general safety procedures designed to protect the body from crushing injuries; prevent hair, clothing and jewelry from becoming entangled in the press; location of switches and function of automated safety systems; the procedures to be followed in the event of an accident.

5. Consult the job ticket and determine the proper position of the printed image on the press sheet.

6. Practice adjustment of the press register system of the particular offset press to meet the standard.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the function of press register systems in the lithographic printing process; name parts and detail the function of the register system(s) of the particular offset press(es) in the training environment. List the tools necessary to adjust the register system(s). Review the general and specific safety procedures and behaviors to be followed at the press. Have the class discuss this information and how it relates to the performance of this task in the workplace.

2. Demonstrate at the press the appropriate and safe techniques for the adjustment of the press register system, including methods for determining register tolerance and conformance with an observation analysis of the task performance. Have each member of the group repeat these activities "hands-on".

3. Adjust the register system of the particular press as needed in the production of student printing projects with the instructor monitoring and evaluating student performance.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, paper stock the necessary tools to adjust the register system, and job tickets for specific printing jobs.

RESOURCES:

Grace, Gregory W. SHEET CONTROL FOR A SMALL LITHOGRAPHIC OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1978.

Smith, Paul G. SHEET CONTROL ON THE OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1981.

Walker, John R. GRAPHIC ARTS FUNDAMENTALS Goodheart-Willcos Company, Inc., South Holland, IL., pg. 130, 1986.

3.0 **COMPETENCY/SKILL:** Inspect and makes-ready press systems.

3.6 **TASK:** Adjusts delivery system.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the press manual and the necessary tools and paper stock,

EVALUATION: adjusts delivery system.

STANDARD: The delivery of press sheets will be free from jams and the sheet stack will be smooth on the sides.

STUDENT LEARNING EXPERIENCES:

1. Describe the function of the offset press delivery system in receiving newly printed sheets and stacking them.

2. Name parts of the particular offset press delivery system and describe the design, function and methods of adjustment of those press components.

3. List the tools necessary to adjust the particular press delivery system.

4. List the general safety procedure designed to protect the body from crushing injuries; prevent hair, clothing and jewelry from becoming entangled in the press; location of switches and function of automated safety systems; and procedures to be followed in the event of an accident.

5. Practice adjustment of the press delivery system to meed the standard.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the function of press delivery systems in the lithographic printing process; name parts and detail the function of the delivery system(s) of the particular offset press(es) in the training environment. List the tools necessary to adjust the delivery system(s). Review the general and specific safety procedures and behaviors to be followed at the press. Have the class discuss this information and how it relates to the performance of this task in the workplace.

2. Demonstrate at the press the appropriate and safe techniques for the adjustment of the press delivery system, including compensating for paper curl and weight, with an observation analysis of the task performance. Have each member of the group repeat these activities "hands-on".

3. Adjust the delivery system of the particular press as needed in the production of student printing projects with the instructor monitoring and evaluating student performance.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, paper stock, the necessary tools to adjust the delivery system.

RESOURCES:

Grace, Gregory W. SHEET CONTROL FOR A SMALL LITHOGRAPHIC OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1978.

Smith, Paul G. SHEET CONTROL ON THE OFFSET PRESS Graphic Arts Technical Foundation, Pittsburg, PA., 1981.

Walker, John R. GRAPHIC ARTS FUNDAMENTALS Goodheart-Willcos Company, Inc., South Holland, IL., pg. 141, 1986.

4.0 **COMPETENCY/SKILL:** Operates press.

4.1 **TASK:** Consults job ticket and creates pressroom dummy.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, and the press manual,

EVALUATION: consults job ticket and creates pressroom dummy.

STANDARD: All of the information contained in the job ticket will be reviewed, evaluated, analyzed and applied to the subsequent production of the printing job so that the completed job will conform with the job ticket specifications. Any inconsistencies in the job ticket information will be identified and will be referred to the supervisor for resolution. A pressroom dummy will be created which incorporates necessary information about position, location and bindery requirements for reference during presswork.

STUDENT LEARNING EXPERIENCES:

1. Review job tickets for existing printing jobs and list name and number notation used to specify the jobs.

2. Create accurate job tickets for samples of existing printing jobs.

3. Identify inaccuracies and inconsistencies in existing job tickets for sample printing jobs.

4. Create pressroom dummies for existing job tickets and printed samples.

5. Create job tickets and pressroom dummies for student printing projects.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present the name and number notation used in job tickets for specific printing jobs. Demonstrate for the class how a job ticket is filled out for a sample printing job.

2. Create accurate job tickets for sample printing jobs. Have the class groups exchange these job tickets and review them for inaccuracies and inconsistencies, and then have the groups create accurate pressroom dummies for the sample printing jobs.

3. Fill out a job ticket and create a pressroom dummy for each student printing project with the instructor monitoring and evaluating student performance.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job tickets for specific printing jobs, printing samples, paper stock.

RESOURCES:

4.0 **COMPETENCY/SKILL:** Operates press.

4.2 **TASK:** Prints test images and adjusts as necessary.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, the necessary supplies and tools, and the press manual,

EVALUATION: prints test images and adjusts as necessary.

STANDARD: Test images on press sheets will conform to job ticket specifications as to internal and external register, sheet-to-sheet register, image quality and color values.

STUDENT LEARNING EXPERIENCES:

1. Identify and list job ticket information for internal and external register, color values and image quality.

2. Evaluate and create list of work sequence to conform with job ticket information.

3. Print test images and adjust by work sequence to conform test images to job ticket criteria.

4. Measure each critical factor on test press sheets and evaluate with job ticket information.

5. Produce final test press sheet to show similarity with job ticket information.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present a list of criteria from the job ticket for a specific printing job detailing requirements for internal and external register, color values and image quality. Lead the class through the process of evaluating this information and creating a work sequence for press adjustment to make test images conform with these job ticket criteria.

2. Demonstrate at the press the process of printing test images, adjusting the press by the work sequence and measuring each critical factor to evaluate similarity with the job ticket criteria, with an observation analysis of the task performance. Finish the demonstration with the production of a final test press sheet.

3. Print test sequence following this procedure and adjust the press to produce final test press sheets as proof of similarity with job ticket. Have each student follow this procedure in the production of each student printing project.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job tickets for specific printing jobs, all necessary supplies, tools, ink and paper.

RESOURCES:

Cox, Francis L. HOW TO CORRELATE PRESS RESULTS WITH PREPRESS PROOFS Graphic Arts Technical Foundation, Pittsburg, PA., 1974.

Jorgensen, George W. and Lavi, Abrahim PRESS INTERACTIONS CHART Graphic Arts Technical Foundation, Pittsburg, PA., 1969.

Jorgensen, George W. SIMPLIFIED PRESS CONTROL SYSTEM Graphic Arts Technical Foundation, Pittsburg, PA., 1986.

Lavi, Abrahim and Jorgensen, George W. LITHOGRAPHIC PRESSMAN'S HANDBOOK Graphic Arts Technical Foundation, Pittsburg, PA., 1977.

4.0 **COMPETENCY/SKILL:** Operates press.

4.3 **TASK:** Obtains "OK" from supervisor.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given press proof sheets and the job tickets for specific printing jobs,

EVALUATION: obtains "OK" from supervisor.

STANDARD: Printing job will be run only after obtaining verbal or written "OK" from pressroom or production supervisor.

STUDENT LEARNING EXPERIENCES:

1. Describe lines of authority and responsibility in the typical printing business and in the pressroom.

2. Evaluate and discuss the economic impact and customer relations problems created by mis-run or poorly produced printing jobs.

3. Explain the reasons for maintaining a satisfactory relationship and good lines of communication with supervisory personnel.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the organizational structure of printing businesses, including job descriptions and lines of authority and responsibility. Discuss the economic realities of printing production and customer relationships. Have the class discuss this information and how it relates to the performance of this task in the workplace.

2. Critique each other's press proof sheets for production readiness in small groups and submit these critiques for the instructor's evaluation and approval.

3. Present to the instructor a press proof sheet for approval for each student production project.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

Press proof sheets and job tickets for specific printing jobs.

RESOURCES:

4.0 **COMPETENCY/SKILL:** Operates press.

4.4 **TASK:** Runs job, maintaining level of quality to meet specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all necessary materials, supplies and tools, and a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor,

EVALUATION: runs job, maintaining level of quality to meet specifications.

STANDARD: The finished job will not vary from the qualitative specifications of the job ticket.

STUDENT LEARNING EXPERIENCES:

1. List the information and the processes affecting it which must be evaluated and controlled during a press run to meet the job ticket specifications.

2. Identify specific techniques which can be used to evaluate and control the processes affecting the information of a specific printing job.

3. Apply specific techniques of evaluation and process control to the production and quality control of a specific job of printing.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the processes occurring during a production run on an offset printing press and how those processes affect the quality of the printed sheet. Define all terminology and explain the basic physical and chemical actions and interactions in the dynamic lithographic process. Have the class discuss this information and how it relates to the performance of this task in the workplace.

2. Demonstrate at the press the use of evaluation and process control techniques to maintain production quality during short press runs, with an observation analysis of the task performance. Have each member of the group repeat these activities "hands-on".

3. Run a short "trial" printing job using the necessary techniques of evaluation and process control to maintain production quality. Evaluate student performance and the quality of the finished "trial" job.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job ticket for a specific printing job, all of the necessary supplies and material for the job, tools, and a press proof sheet for that job which has been assessed as "OK" by the pressroom or production supervisor.

RESOURCES:

Field, Gary G. USING THE REFLECITON DENSITOMETER FOR INK FILM CONTROL Graphic Arts Technical Foundation, Pittsburg, PA., 1972.

Levenson, Harvey, R. PREVENTIVE QUALITY CONTROL: SHEETFED PRESSROOM Graphic Arts Technical Foundation, Pittsburg, PA/. 1971.

Lavi, Abrahim and Jorgensen, George W. LITHOGRAPHIC PRESSMAN'S HANDBOOK Graphic Arts Technical Foundation, Pittsburg, PA., 1977.

Porter, A.S. LITHOGRAPHIC PRESSWORK Graphic Arts Technical Foundation, Pittsburg, PA., 1980.

4.0 **COMPETENCY/SKILL:** Operates press.

4.5 **TASK:** Evaluates and maintains register.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, and the job running on the press,

EVALUATION: evaluates and maintains register.

STANDARD: Internal and external register will be referenced to the established norm during the press run and will not vary from those of the "OK'D" press proof sheet.

STUDENT LEARNING EXPERIENCES:

1. List the possible causes of internal and external image mis-register during g a press run and the appropriate techniques for monitoring, measuring correcting and avoiding these problems.

2. Observe and analyze the occurrence of image mis-register during a press run and document the effect of this occurrence on job quality and productivity.

3. Apply appropriate techniques for monitoring, evaluating and controlling register during press runs in the production of specific jobs of printing.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on all of the possible causes of misregister of printed images on a press sheet and the appropriate techniques for monitoring, evaluating and correcting these problems.

2. Demonstrate at the press, a job running with an image misregister of printed images on a press sheet and the appropriate techniques for monitoring, evaluating and correcting these problems.

3. Apply the appropriate techniques of evaluation and corrective action to maintain register during the production run of each student printing project. Monitor and evaluate each completed project for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary materials, supplies and tools to produce a specific job of printing, a press proof sheet for that job which has been assessed as "OK" by the pressroom or production supervisor.

RESOURCES:

Cozart, Jerome X. and DeJidas, Lloyd P. IMAGE CONTROL MARKS SYSTEM Graphic Arts Technical Foundation, Puttsburg, PA., 1981.

Jorgensen, George W. CONTROL OF COLOR REGISTER Graphic Arts Technical Foundation, Pittsburg, PA., 1982.

Reed, Robert F. and Eldred, Nelson R. PAPER, RELATIVE HUMIDITY, AND COLOR REGISTER Graphic Arts
Technical Foundation, Pittsburg, PA., 1962, rev. 1985.

4.0 **COMPETENCY/SKILL:** Operates press.

4.6 **TASK:** Evaluates and maintains ink-water balance and pH.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, and the job running on the press,

EVALUATION: evaluates and maintains ink-water balance and pH.

STANDARD: Ink film thickness, non-image area cleanliness, ink condition and fountain solution pH will be referenced to the established norm during the press run and will not vary from those criteria or the visual quality of the "OK'D" press proof sheet.

STUDENT LEARNING EXPERIENCES:

1. Describe and define the state of ink-water balance which is necessary to produce a stable image of the proper coverage and density during the lithographic process. List the possible types of ink-water mis-balance which may occur during a press run and describe the effect of each one on the image quality and cleanliness of the press sheet.

2. Measure the fountain solution during the press run using litmus test strips or a pH meter and reference this data to the correct acidity level for the specific fountain solution being used.

3. Monitor, evaluate and maintain the ink-water balance and pH during press runs in the production of specific jobs of printing.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the concept of ink-water balance and fountain pH and explain how they interact during the lithographic printing process to affect the quality of the printed image and the cleanliness of the non-image area. List the possible types of mis-balance and the effects they have on the quality of the printed image. Discuss appropriate techniques for achieving and maintaining balance during press runs.

2. Demonstrate at the press, techniques for achieving and maintaining balance during a press run. Create deliberate mis-balance of different types while the press runs and show students the effect of each on the printed sheet. Measure the fountain solution pH and have each student repeat this measurement "hands-on".

3. Apply the appropriate techniques of evaluation and corrective action to maintain ink-water balance and pH during the production run of each student printing project. Monitor and evaluate each completed project for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary materials, supplies and tools to produce a specific job of printing, a press proof sheet for that job which has been assessed as "OK" by the pressroom or production supervisor.

RESOURCES:

Jorgensen, George W. CONTROL OF INK-WATER BALANCE Graphic Arts Technical Foundation, Pittsburg, PA., 1981.

Elred, Nelson R. SOLVING OFFSET INK PROBLEMS Graphic Arts Technical Foundation, Pittsburg, PA., 1987.

Olinghouse, Lane THE FOUNTAIN OF SOLUTIONS Printing Impressions; North American Publishing Company, Philadelphia, PA., Vol. 29, No. 11, pg. 52, 1987.

Staff Author PRESSROOM: INK FILM THICHNESS MUST BE CONTROLLED TO MAINTAIN PROPER INK-WATER BALANCE American Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol 198, No. 4; pp. 58-59, 1987.

Audiovisual Slide Show UNDERSTANDING AND MEASURING pH Graphic Arts Technical Foundation, Pittsburg, PA., 1973.

4.0 **COMPETENCY/SKILL:** Operates press.

4.7 **TASK:** Evaluates and maintains even transfer and impression pressure.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, and the job running on the press,

EVALUATION: evaluates and maintains even transfer and impression pressures.

STANDARD: Dot gain, slur and image drop-out will be referenced to the established norm during the press run and will not vary from those criteria or the visual quality of the "OK'D" press proof sheet.

STUDENT LEARNING EXPERIENCES:

1. Describe and define the state of over-pressure, under-pressure and correct pressure in the plate-to-blanket (offset) transfer and in the impression transfer of the lithographic image and describe the effect that each of these has on the image quality of the transferred image.

2. Measure and adjust the plate-to-blanket transfer pressure to achieve the optimum image resolution on the offset blanket; measure and adjust the impression pressure to achieve a "kiss" impression, inspect for areas of low pressure and evaluate dot quality, adjust to achieve an optimum image reproduction quality.

3. Monitor, evaluate and maintain even transfer and impression pressures during press runs in the production of specific jobs of printing to achieve optimum quality and uniformity in the finished jobs.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the physical process of image transfer from the offset printing plate to the offset blanket and from the offset blanket to the paper surface. Explain the effects of over-pressure, under-pressure and correct pressure on these image transfers and the subsequent effect on image quality. List and define the terminology used to describe qualitative states of lithographic image quality. List and discuss techniques to monitor, measure and correct defects in image quality caused by improper image transfer pressures.

2. Demonstrate at the press the adjustment and maladjustment of plate-to-blanket (offset) transfer pressure and impression transfer pressure and the subsequent effect they have on image quality.

3. Apply the appropriate techniques of evaluation and corrective action to maintain even transfer and impression pressures during the production run of each student printing project. Monitor and evaluate each competed project for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary materials, supplies and tools to produce a specific job of printing, a press proof sheet for that job which has been assessed as "OK" by the pressroom or production supervisor.

RESOURCES:

Benevento, Frank S. CYLINDER ALIGNMENT AND ADJUSTMENTS Graphic Arts Technical Foundation, Pittsburg, PA.

Cox, Francis L. HOW TO CORRELATE PRESS RESULTS WITH PREPRESS PROOFS Graphic Arts Technical Foundation, Pittsburg, PA., 1974.

4.0 **COMPETENCY/SKILL:** Operates press.

4.8 **TASK:** Evaluates color and color balance.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, and the job running on the press.

EVALUATION: evaluates and maintains color and color balance.

STANDARD: The hue, tint and overall color balance being printed will be referenced to the established norm during the press run and will not vary from those criteria or the visual quality of the "OK'D" press proof sheet.

STUDENT LEARNING EXPERIENCES:

1. List and describe the color matching systems commonly used in offset printing and identify the system being used in the training environment. Explain the basic color theory of pigments as applied to printing inks and the concepts of hue and tint. Describe the techniques used to match color samples with the printed image during a press run and the use of a color densitometer for process color control. Explain the importance of ink system cleanliness in the maintenance of color matching and describe appropriate techniques for color-washing inking systems to correct problems.

2. Select and match specific color samples during a press run and control overall press sheet color balance; use a color densitometer to measure and maintain process color values during a press run; perform a color-wash to change an inking system from black to process yellow and evaluate the results.

3. Monitor, evaluate and maintain color and color balance during press runs in the production of specific jobs of printing to achieve color match and overall color balance in the finished jobs.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on offset ink color matching systems and basic color theory of ink pigments, Define and explain process colors and the techniques of process color presswork. Identify the color matching system used in the training environment and explain the use of the color sample book. Explain the function of a color densitometer and describe the appropriate techniques for using it in process color control. Explain the need for and the appropriate techniques for achieving ink system color cleanliness.

2. Demonstrate at the press the appropriate techniques for color evaluation and maintenance during a press run using specific inks and color samples. Demonstrate the use of a color densitometer to control process color values. Demonstrate a color-wash.

3. Apply the appropriate techniques of evaluation, adjustment and maintenance to achieve accurate color matching and overall color balance during the production of each student printing project. Monitor and evaluate each completed project for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary materials, supplies and tools to produce a specific job of printing, a color densitometer, color system matching samples, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor.

RESOURCES:

Elyjiw, Zenon GATF COMPACT COLOR TEST STRIP: RESEARCH PROJECT REPORT Graphic Arts Technical Foundation, Pittsburg, PA., 1985.

Jorgensen, George W. CONTROL OF COLOR ON PRESS: HALFTONES Graphic Arts Technical Foundation, Pittsburg, PA., 1984.

Jorgensen, George W. CONTROL OF COLOR ON PRESS: SINGLE INK FILM LAYERS Graphic Arts Technical Foundation, Pittsburg, PA., 1982.

4.0 **COMPETENCY/SKILL:** Operates press.

4.9 **TASK:** Evaluates and maintains trapping.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, and the job running on the press,

EVALUATION: evaluates and maintains trapping.

STANDARD: Over and under trapping on overprint image areas and the progressive values of four color process reproductions and color simulations will be referenced to the established norm during the press run and will not vary from those criteria or the visual quality of the "OK'D" press proof sheet.

STUDENT LEARNING EXPERIENCES:

1. Define and explain the concept of trapping and the conditions of ink type, dryness and pH which affect the process of trapping. Explain the difference between dry trapping and wet trapping. Describe the techniques used to measure trapping.

2. Select and print images over previously printed dry images and examine under magnification. Evaluate percentage of trapping visually and adjust press conditions to improve trapping. Select and print images over freshly printed wet images of a different color and examine under magnification. Evaluate percentage of trapping and adjust press conditions to improve trapping.

3. Monitor, evaluate and maintain trapping during press runs in the production of specific jobs of printing to achieve proper levels of trapping in the finished printing jobs.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on wet and dry trapping in ink overprint image areas and explain the factors which affect the process. Describe the techniques used to measure and evaluate trapping, and explain the consequences of under or over trapping on image quality, process color matching and color simulation matching.

2. Demonstrate at the press the overprinting of dry and wet ink images and show examples of undertrapping, overtrapping and correct trapping with an observational analysis of the effect each has on the quality and color value of the printed results. Demonstrate magnified inspection of the trapped image as a method of evaluation and, if possible, the use of a microprocessor-controlled color densitometer with a trapping evaluation program mode.

3. Apply the appropriate techniques for monitoring, evaluating and maintaining trapping during the production of each student printing project. Monitor and evaluate each completed project for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary materials, supplies and tools to produce a specific job of printing, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor.

RESOURCES:

Field, Gary G. USING THE REFLECTION DENSITOMETER FOR INK FILM CONTROL Graphic Arts Technical Foundation, Pittsburg, PA., 1972.

Jorgensen, George W. CONTROL OF COLOR ON PRESS: OVERPRINTS Graphic Arts Technical Foundation, Pittsburg, PA., 1983.

Scarlett, Terry and Eldred, Nelson WHAT THE PRINTER SHOULD KNOW ABOUT INK Graphic Arts Technical Foundation, Pittsburg, PA., 1984.

Staff Author, PRSSROOM: INK FILM THECKNESS MUST BE CONTROLLED TO MAINTAIN PROPER INK/WATER BALANCE American Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 198, No. 4; pp. 58-59, 1987.

4.0 **COMPETENCY/SKILL:** Operates press.

4.10 **TASK:** Evaluates and maintains plate image quality.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, and the job running on the press.

EVALUATION: evaluates and maintains plate image quality.

STANDARD: Press sheet image quality will be monitored for indications of plate image wear, abrasion, flaking, contamination or dot loss. Identification of such conditions will be made and the plate will be submitted for re-make with minimal press sheet loss.

STUDENT LEARNING EXPERIENCES:

1. List and describe the types and causes of offset plate image breakdown. Explain the need for monitoring and evaluating production output to identify any plate image deterioration and correct it with minimal waste.

2. Inspect flawed plates and identify the types and causes. Print sample sheets from flawed plates and inspect the results. Identify plate flaws from pre-printing to achieve finished printing jobs free of plate image flaws.

3. Monitor, evaluate and maintain plate image quality during press runs in the production of specific jobs of printing to achieve finished printing jobs free of plate image flaws.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the performance rating of different types of offset plates, typical types of image degradation due to wear, the effects of contamination, improper processing and storage, and abrasion on plate image quality. Explain the economic impact of flawed press runs due to plate image deterioration which is not corrected. Discuss techniques for monitoring and evaluating plate image quality to identify flaws quickly.

2. Distribute plates with flaws to class groups for their inspection and evaluation. Print sample sheets from these plates and distribute to class groups for their evaluation and identification of plate image flaws.

3. Apply the appropriate techniques for monitoring, evaluating and maintaining plate image quality during the production of each student printing project. Monitor and evaluate each completed project for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary materials, supplies and tools to produce a specific job of printing, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, sample offset plates with known image flaws.

RESOURCES:

Walker, John R. GRAPHIC ARTS FUNDAMENTALS Goodheart-Willcox Comapny, Inc., South Holland, IL., pp. 144-145, 1986.

Staff Author GATF REVIEWS SOLUTIONS TO PAPER-GENERATED HICKEYS Graphic Arts Technical Foundation, Pittsburg, PA., 1970.

Staff Author PRESSROOM: CATCHUP SCUM CAN BE ELIMINATED ON AN OFFSET PRESS BY ADDING MOISTURE AND TAKING PROPER CARE OF COMPONENTS Americal Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 198, No. 3; pg. 106, 1986.

4.0 **COMPETENCY/SKILL:** Operates press.

4.11 **TASK:** Evaluates and avoids set-off.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, all the necessary materials, supplies and tools, and a specific printing job running on the press,

EVALUATION: evaluates and avoids set-off.

STANDARD: The weight and type of paper stock, and the ink properties and press sheet coverage areas will be evaluated and the correct drying equipment, supplies and techniques will be used so that the finished printing job will be free of set-off.

STUDENT LEARNING EXPERIENCES:

1. Describe the different types of offset printing inks and the drying characteristics of each one.

2. Evaluate the drying requirements of different ink coverage areas.

3. Describe the drying characteristics of different types and surfaces of paper stock.

4. Observe the use of and describe the function of chemical drier additives; list the appropriate techniques and safety precautions for their use.

5. Observe the use of and describe the function of powder spray, I.R. and U.V. drying systems; list the appropriate techniques and safety precautions for their use.

6. Monitor, evaluate and avoid set-off during press runs in the production of specific jobs of printing using the drying materials and equipment available in the training environment to achieve finished printing jobs free of set-off.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the causes of set-off in the delivery system and on the drying characteristics of different types of offset printing inks, coverage areas, and different types, surfaces and weights of paper stock. Explain the economic impact of flawed press runs due to set-off. Discuss techniques to evaluate and avoid potential set-off.

2. Demonstrate at the press the use of chemical drier additives, powder spray, I.R. and U.V. drying systems if these are available in the training environment with an observational analysis of their safe and appropriate application.

3. Apply the appropriate techniques for monitoring, evaluating and avoiding set-off during the production of each student printing project. Monitor and evaluate each completed project.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all of the necessary materials, supplies and tools to produce a specific job of printing, a press proof sheet, powder spray, I.R. and U.V. drying equipment as an adjunct to the presses if available in the training environment.

RESOURCES:

Eldred, Nelson R. CUTTING DOWN ON SPRAY POWDER Graphic Arts Technical Foundation, Pittsburg, PA., 1985.

Eldred, Nelson R. INFRARED DRYING AND SETTING OF INKS Graphic Arts Technical Foundation, Pittsburg, PA., 1979.

Scarlett, Terry and Eldred, Nelson R. WHAT THE PRINTER SHOULD KNOW ABOUT INK Graphic Arts Technical Foundation, Pittsburg, PA., 1984.

4.0 **COMPETENCY/SKILL:** Operates press.

4.12 **TASK:** Evaluates and maintains productivity.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, and the job running on the press,

EVALUATION: evaluates and maintains productivity.

STANDARD: The job will be printed as rapidly as possible while maintaining the visual quality of the "OK'D" press proof sheet, the specific criteria contained in the job ticket specifications, and while minimizing waste.

STUDENT LEARNING EXPERIENCES:

1. List and describe the qualitative production criteria which affect the speed at which a particular offset press can be made ready for and run a specific job of printing.

2. List and describe the waste of time and material which can occur during a press run because of specific production problems.

3. Explain the basic economics of a printing business in creating a salary for production workers and a profit for the owners; discuss the impact of waste and inefficiency on wages and profits.

4. Measure production time and waste during press runs in the production of specific jobs of printing; evaluate causes for waste and lost time and correct them to achieve maximum productivity in the finished printing job.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the basic economics of printing production and on techniques to minimize waste and inefficiency in the pressroom. Explain and discuss the criteria which affect the speed at which a specific printing job can be made-ready and run on a particular offset press. Discuss the responsibility of the press operator as a member of a production team to prepare and produce printing jobs efficiently.

2. Demonstrate at the press techniques for the efficient production of a printing job. Demonstrate the effect of bad judgement and poor time and motion management on productivity, and the effects of haste and poor monitoring and quality control on waste. Explain and demonstrate the proper use of a production log document production time, function and waste.

3. Apply the appropriate techniques for monitoring, evaluating and maintaining productivity during the production of each student printing project. Complete a production log entry for each phase of each student production project documenting production time, function and waste. Monitor the productivity of each student production project and each production log for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary materials, supplies and tools, a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, blank printing production log sheets.

RESOURCES:

DeJidas, Lloyd and Eldred, Nelson R. SOLVING SHEETFED OFFSET PRESS PROBLEMS Graphic Arts Technical Foundation, Pittsburg, PA., 1987.

DeJidas, Lloyd and Levenson, Harvey R. MAINTAINING PRODUCTION WITH SUBSTITUTE MATERIALS Graphic Arts Technical Foundation, Pittsburg, PA., 1974.

Levenson, Harvey R. PREVENTIVE QUALITY CONTROL: SHEETFED PRESSROOM Graphic ARts Technical Foundation, Pittsburg, PA., 1971.

Staff Author PRESSROOM: REDUCING SPOILAGE AND WASTE DEMANDS CLOSE, CONSTANT MONITORING AND AN EYE FOR DETAIL Americal Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 199, No. 1; pp. 92-93, 1987.

5.0 **COMPETENCY/SKILL:** Performs troubleshooting.

5.1 **TASK:** Identifies problem.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all the necessary materials, supplies and tools, and a press sheet on which the image quality or position varies from the job ticket specifications or from the visual quality of a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor,

EVALUATION: identifies problem.

STANDARD: Each problem causing a variation in image quality or position on the press sheet will be correctly and accurately identified.

STUDENT LEARNING EXPERIENCES:

1. Inventory and describe the relationship between technical variables affecting image quality and position on the printed sheet and the actual image defect or measurable position variation observable on the printed sheet.

2. List the terminology used to describe each specific defect in image quality or position and define these terms as they relate to the observable flaw.

3. Evaluate press sheets with specific defects of image quality or position and correctly identify all problems.

4. Evaluate press sheets during press runs of specific printing jobs for defects of image quality or position and correctly identify problems.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present an inventory of reasons interrelationships between all of the technical affecting image quality and position, and the actual defect of image quality or position as seen or measured on the printed page; note those flaws which can have one or more cause, those which look quite similar but have different causes,, and those which require a high degree of concentration to observe. Name the flaws by the correct terminology relating to their appearance on the printed sheet.

2. Appraise the image quality and image position of press sheets which have flaws and correctly identify all problems in small class groups.

3. Identify correctly all problems of image quality and position during the production of each student printing project. Monitor each identification for correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a press sheet which varies from specifications and the proof sheet, press sheets with a variety of flaws in image quality or position.

RESOURCES:

DeJidas, Lloyd and Eldred, Nelson R. SOLVING SHEETFED OFFSET PRESS PROBLEMS Graphic Arts Technical Foundation, Pittsburg, PA., 1987.

Jorgensen, George W. CONTROL OF PRESS SHEET SPOTS AND PATTERNS Graphic Arts Technical Foundation, Pittsburg, PA., 1985.

Jorgensen, George W. and Lavi, Abrahim PRESS INTERACTIONS CHART Graphic Arts Technical Foundation, Pittsburg, PA., 1969.

Lavi, Abrahim and Jorgensen, George W. LITHOGRAPHIC PRESSMAN'S HANDBOOK Graphic Arts Technical Foundation, Pittsburg, PA., 1977.

5.0 **COMPETENCY/SKILL:** Performs troubleshooting.

5.2 **TASK:** Analyzes problem.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all the necessary materials, supplies and tools, and a problem which has been identified as causing a variation in the image quality or position of a press sheet as compared to the job ticket specifications or from the visual quality of a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor.

EVALUATION: analyzes problem.

STANDARD: All of the possible causes for the particular problem will be inventoried, and the physical, chemical and experiential components of each possible cause for the problem will be studied and compared.

STUDENT LEARNING EXPERIENCES:

1. Inventory and describe all of the possible causes for each possible defect of image quality or position which may be encountered in the production of a specific printing job.

2. Analyze press sheets with specific defects of image quality or position and list all of the possible causes for the problem in order of descending probability.

3. Analyze problems of press sheet image quality of position during the press runs of specific printing jobs and list all possible causes in order of probability.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present an inventory and functional description of all of the possible causes for each possible defect of image quality or position during a press run and demonstrate the application of the logical principles of deductive reasoning to analyze the relationships of cause-effect with the goal of mastering the process.

2. Analyze flawed press sheets in small class groups and have each group prepare and present an inventory of defects and their possible causes listed in order of descending probability.

3. Analyze completely all defects of image quality or position during the production of each student production project. Monitor each analysis for completeness and correctness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a press sheet on which a problem has been identified which causes a variation in image quality or position as compared to the job ticket specifications or from the visual quality of a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor.

RESOURCES:

DeJidas, Lloyd and Eldred, Nelson R. SOLVING SHEETFED OFFSET PRESS PROBLEMS Graphic Arts Technical Foundation, Pittsburg, PA., 1987.

Jorgensen, George W. CONTROL OF PRESS SHEET SPOTS AND PATTERNS Garphic Arts Technical Foundation, Pittsburg, PA., 1985.

Jorgensen, George W. and Lavi, Abrahim PRESS INTERACTIONS CHART Graphic Arts Technical Foundation, Pittsburg, PA., 1969.

Lavi, Abrahim and Jorgense, George W. LITHOGRAPHIC PRESSMAN'S HANDBOOK Graphic Arts Technical Foundation, Pittsburg, PA., 1977.

5.0 **COMPETENCY/SKILL:** Performs troubleshooting:

5.3 **TASK:** Selects best solution.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a problem which has been identified as causing a variation in the image quality or position of a press sheet as compared to the job ticket specifications or from the visual quality of a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, in inventory of the possible causes for the problem and an analysis of the physical, chemical and experiential components of each possible cause,

EVALUATION: selects best solution.

STANDARD: The solution will be the one which, given all the known data, will provide the most logical and efficient resolution of the problem.

STUDENT LEARNING EXPERIENCES:

1. Consider the probability of all of the possible causes for a problem and formulate solutions for each which corrects each cause in the most logical and efficient way.

2. Design, create and apply methods for testing the validity of the possible solutions to the problem.

3. Select the most effective solution which can be applied in a timely, cost-conscious, reliable and safe manner.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on techniques to solve problems in a production work setting and on testing procedures and the experimental methods needed to apply them in the workplace.

2. Demonstrate at the press the selection and validity of possible solutions to technical production problems.

3. Select appropriate solutions to technical problems during the production of each student production project. Monitor and evaluate each proposed solution for appropriateness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a press sheet on which a problem has been identified, an inventory of possible causes for the problem and an analysis of the physical, chemical and experiential components of each possible cause.

RESOURCES:

DeJidas, Lloyd and Eldred, Nelson R. SOLVING SHEETFED OFFSET PRESS PROBLEMS Graphic Arts Technical Foundation, Pittsburg, PA., 1987.

Jorgensen, George W. CONTROL OF PRESS SHEET SPOTS AND PATTERNS Graphic Arts Technical Foundation, Pittsburg, PA., 1981.

Jorgensen, George W. and Lavi, Abrahim PRESS INTERACTIONS CHART Graphic Arts Technical Foundation, Pittsburg, PA., 1969.

Jorgensen, George W. SIMPLIFIED PRESS CONTROL SYSTEM Graphic Arts Technical Foundation, Pittsburg, PA., 1986.

Lavi, Abrahim and Jorgensen, George W. LITHOGRAPHIC PRESSMAN'S HANDBOOK Graphic Arts Technical Foundation, Pittsburg, PA., 1977.

5.0 **COMPETENCY/SKILL:** Performs troubleshooting.

5.4 **TASK:** Implements solution.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a problem which has been identified as causing a variation in the image quality or position of a press sheet as compared to the job ticket specifications or from the visual quality of a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, an inventory of the possible causes for the problem, an analysis of the physical, chemical and experiential components of each possible cause, and a solution which will provide the most logical and efficient resolution of the problem,

EVALUATION: implements solution.

STANDARD: The actions taken to resolve the problem will be consistent in content and sequence with the formulated solution to the problem.

STUDENT LEARNING EXPERIENCES:

1. List and describe the steps to be followed to correct a specific defect of image quality or position in the sequence to be followed in implementing them. Explain and defend this content and sequence when questioned.

2. Practice solutions which have been tried and proven by the instructor and evaluate the degree of success experienced in resolving problems appropriately.

3. Apply correct and appropriate actions to implement solutions to production problems effectively during the press runs of specific printing jobs.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the proper techniques and procedures used to solve specific problems affecting the image quality and position of press sheets in production press runs in a working environment, emphasizing the need for logic, consistency and efficiency in the correct solution. Discuss the concept of "performance pressure" and the need for calm and rational application of corrective actions.

2. Demonstrate at the press the correct implementation of procedures to resolve common production problems. Have each member of the class group practice these procedures "hands-on".

3. Apply consistently the appropriate procedures to resolve production problems during the production of each student printing project. Monitor and evaluate the implementation of solutions for correctness and effectiveness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job ticket for a specific job or printing, all the necessary materials, supplies and tools, a press sheet on which a problem has been identified, an inventory of possible causes for the problem, an analysis of the physical, chemical and experiential components of each possible cause, and a solution which has been selected as the best one to provide a logical and efficient resolution of the problem.

RESOURCES:

DeJidas, Lloyd and Eldred, Nelson R. SOLVING SHEETFED OFFSET PRESS PROBLEMS Graphic Arts Technical Foundation, Pittsburg, PA., 1987.

Jorgensen, George W. CONTROL OF PRESS SHEET SPOTS AND PATTERNS Graphic Arts Technical Foundation, Pittsburg, PA., 1985.

Jorgensen, George W. and Lavi, Abrahim PRESS INTERACTIONS CHART Graphic Arts Technical Foundation, Pittsburg, PA., 1969.

Jorgensen, George W. SIMPLIFIED PRESS CONTROL SYSTEM Graphic Arts Technical Foundation, Pittsburg, PA., 1986.

Lavi, Abrahim and Jorgensen, George W. LITHOGRAPHIC PRESSMAN'S HANDBOOK Graphic Arts Technical Foundation, Pittsburg, PA., 1977.

5.0 **COMPETENCY/SKILL:** Performs troubleshooting.

5.5 **TASK:** Evaluates and accepts or rejects results.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a problem which has been identified as causing a variation in the image quality or position of a press sheet as compared to the job ticket specifications or from the visual quality of a press proof sheet which has been assessed as "OK" by the pressroom or production supervisor, an inventory of the possible causes for the problem, an analysis of the physical, chemical and experiential components of each possible cause, a solution which will provide the most logical and efficient resolution of the problem, and actions taken to resolve the problem which are consistent in content and sequence with the formulated solution to the problem,

EVALUATION: evaluates and accepts or rejects results.

STANDARD: The results will be assessed and referenced to the established norms in the job ticket specifications and the "OK'D" press proof sheet; those results which meet the established norms will be accepted as satisfactory resolutions of the problem. Those results which do not meet the established norms will be rejected as unsatisfactory resolutions to the problem and the troubleshooting sequence will be repeated with this information integrated into the process.

STUDENT LEARNING EXPERIENCES:

1. Compare and describe the similarities and differences between press proof sheets and sheets printed to test the implementation of solutions to various technical problems. Identify those sheets which conform to proof specifications and those which do not.

2. List and review the tasks in the troubleshooting sequence. Practice re-evaluating unsatisfactory resolutions to technical problems by integrating new information and repeating the sequence. Explain and defend decisions and logic used in this process.

3. Evaluate and accept or reject the results of solutions to technical production problems during the production of each student printing project; re-evaluated and resolve the unsatisfactory results of each attempted solution.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate comparison techniques for evaluating press sheets which conform to specifications to measure the resolution of specific technical production problems. Review specific test sheets, compare them to press proofs and explain the reasons why they do or do not conform to specifications.

2. Demonstrate the response to unsatisfactory results by integrating new information learned into the troubleshooting sequence. Repeat this process until satisfactory results are obtained.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, the job ticket for a specific printing job, all the necessary materials, supplies and tools, a press proof sheet, press sheets showing satisfactory and unsatisfactory resolutions of technical production problems.

RESOURCES:

Cox, Francis L. HOW TOI CORRELATE PRESS RESULTS WITH PREPRESS PROOFS Graphic Arts Technical Foundation, Pittsburg, PA., 1974.

6.0 COMPETENCY/SKILL: **Performs maintenance.**

6.1 **TASK:** Cleans and lubricates on scheduled basis and as necessary.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the press manual, all the necessary supplies and tools, a production schedule and regular press maintenance schedule,

EVALUATION: cleans and lubricates on scheduled basis and as necessary.

STANDARD: The press will always be properly lubricated and will always be clean except during and immediately after a press run.

STUDENT LEARNING EXPERIENCES:

1. List the lubrication points and periods for all recommended parts of the particular offset press(es) in the training environment. Create a lubrication log to document maintenance.

2. List and describe the appropriate cleaning techniques for the particular offset press(es) in the training environment.

3. Describe the effects of inadequate lubrication and poor levels of cleanliness on the life of press wear parts and the quality of press production.

4. Maintain appropriate levels of cleanliness and lubrication on a regular schedule and during the production of specific jobs of printing.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the proper lubrication and cleaning of the particular offset press(es) and the use of a lubrication log to document maintenance. Explain the consequences of poor maintenance practices on press life and function.

2. Demonstrate at the press the appropriate lubrication and cleaning techniques used in press maintenance. Have each member of the group practice these procedures "hands-on".

3. Apply the appropriate press maintenance techniques during the production of each student printing project; monitor and evaluate these procedures for completeness.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals for those presses, all the necessary lubricants, cleaning supplies and tools.

RESOURCES:

Geis, A. John SHEET-FED PRESS PREVENTIVE MAINTENANCE Graphic Arts Technical Foundation, Pittsburg, PA., 1982.

Olinghouse, Lane CLEANING UP IN WASHUP Printing Impressions; North American Publishing Company, Philadelphia, PA., Vol. 29, No. 9; pg. 57, 1987.

6.0 **COMPETENCY/SKILL:** Performs maintenance.

6.2 **TASK:** Accomplishes minor repairs.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, the press manual, the press parts manual, all the necessary supplies and tools, the necessary spare parts, a production schedule and a regular press maintenance schedule,

EVALUATION: accomplishes minor repairs.

STANDARD: The assessment and replacement of wear parts will be accomplished on a regular basis and emergency repairs necessary to meet production deadlines will be accomplished with the exception of gear and cylinder damage, major mechanical repair and major electrical repair including microprocessors.

STUDENT LEARNING EXPERIENCES:

1. List the wear parts in the particular offset press(es) in the training environment, the press function that they affect or control, and their approximate useful lifetime. Use the press parts book to find the part number for each of these parts and its place in the press assembly.

2. List the tools necessary to replace wear parts in the particular offset press.

3. Describe the proper procedures to be used in replacing mechanical parts, electrical switches and plug-in components.

4. Replace parts and repair the press as needed on a regular basis and in emergencies during the production of specific printing jobs.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the function and life of wear parts in the particular offset press(es) and the use of the press parts manual in identifying them. Describe appropriate techniques for evaluating and replacing wear parts on a scheduled and on a emergency basis, with an emphasis on safe procedure.

2. Demonstrate at the press the proper procedures for evaluating wear parts, their affect on press function, and the proper procedures for replacing them safely.

3. Repair press(es) as necessary to maintain press operation during the production of each student printing project. Monitor and inspect each repair before resuming press operation.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, the press manuals and press parts manuals for those presses, all necessary supplies, tools and spare parts.

RESOURCES:

6.0 **COMPETENCY/SKILL:** Performs maintenance.

6.3 **TASK:** Maintains a neat, clean and safe working environment.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a pressroom and associated work areas of a printing business, and the necessary tools and cleaning supplies,

EVALUATION: maintains a neat, clean and safe working environment.

STANDARD: The pressroom and related working areas of the printing business will be well organized, free from rubbish, press scrap, dirt, oil and solvent spills, will have approved safety containers in constant use, approved fire extinguishers and a posted fire exit plan, will be well lighted and ventilated, and will be free of all known safety hazards.

STUDENT LEARNING EXPERIENCES:

1. Visit a properly managed and well run commercial printing business and inspect the pressroom and related work areas. Discus the orderliness and cleanliness which is observed there.

2. Describe the working environment in detail and list the possible consequences of unsafe and disorderly conditions on the health, safety, attitude and performance of the employees.

3. Create a set of working procedures to keep the classroom and workplace in a neat, clean and safe condition.

4. Apply working procedures and maintain a neat, clean and safe working environment at all times.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Conduct a field trip to a well organized and maintained commercial printing business and observe the working environment.

2. Demonstrate and discuss appropriate procedures to follow in maintaining the training environment in a clean and orderly state.

3. Require each student to follow established procedures for organizing and cleaning the training environment. Hold each student accountable for cleaning up work areas and being organized.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

Cleaning tools, supplies and equipment.

RESOURCES:

Principato, Mike A QUESTION OF SAFETY: TOXIC CHEMICALS IN THE PRSSROOM Americal Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 198, No. 6; pp. 52-53, 1987.

Strock, Louis D. SAFETY PRACTICES FOR THE GRAPHIC ARTS Grahpic Arts Technical Foundation, Pittsburg, PA., 1984.

7.0 **COMPETENCY/SKILL:** Performs related duties.

7.1 **TASK:** Communicates and coordinates work with other production workers.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, a production schedule, an established set of quality control criteria, and a production staff of co-workers,

EVALUATION: communicates and coordinates work with other production workers.

STANDARD: Information necessary to the achievement of production schedules and quality-control standards will be reported to and discussed with production supervisors and other production workers in a prompt and courteous manner without regard to personality conflicts or other personal concerns.

STUDENT LEARNING EXPERIENCES:

1. List and describe the job titles and basic job responsibilities of production supervisors and workers typically found in small, mid-sized and large printing businesses. Diagram the lines of communication necessary to facilitate efficient production.

2. List and describe the categories and kinds of information which must always be communicated accurately and promptly to ensure efficient production.

3. Communicate accurately and maintain courteous relations with other students and the instructor in the performance of all classroom activities and the production of all student printing projects.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on job responsibilities, communications procedures, lines of authority and responsibility, and the basics of good business social relations in different size printing businesses.

2. Present and review information on the communication of critical production information and the need for constant awareness of quality control and positive customer relations. Discuss the economic impact of production and interpersonal problems on a printing business and on the job security of the production personnel.

3. Practice and apply accurate and timely communication skills and procedures at all times in the instructional environment and accept personal responsibility for all decisions made in the process of student printing project production.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, all necessary production supplies and materials.

RESOURCES:

7.0 **COMPETENCY/SKILL:** **Performs related duties.**

7.2 **TASK:** Maintains inventory of necessary supplies and materials.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular offset press, a production schedule, and a list of necessary supplies and materials,

EVALUATION: maintains inventory of necessary supplies and materials.

STANDARD: Production schedules will never be delayed because of a lack of necessary supplies and materials.

STUDENT LEARNING EXPERIENCES:

1. Estimate the amount of materials and supplies needed to produce specific jobs of printing and to produce every job on a week's production schedule; the estimate is to specify type and amount of material or supply needed, not dollar value.

2. List the press supplies which are consumed or wear out at a known rate and estimate their life or rate of consumption.

3. List all press supplies which have a known shelf life.

4. Check on ordering procedures and on order processing time, shipping time and other factors affecting inventory maintenance.

5. Create in inventory maintenance system which can be adjusted to accommodate changing production schedules.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the specific inventory of materials and supplies used in the instructional environment for the particular offset press(es) and the scheduled printing production to be accomplished during the instructional term. Discuss all factors affecting the maintenance of this inventory in the instructional environment.

2. Require students to record their actual use of materials and supplies during student printing project production and to document this reduction of inventory daily.

3. Require students to requisition materials and supplies needed to produce student printing projects well in advance of the time that they withdraw them from inventory.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One or more offset presses, all necessary production supplies and materials.

RESOURCES:

Geis, A. John CONTROLLING THE QUALITY OF PRESSROOM MATERIALS Graphic Arts Technical Foundation, Pittsburg, PA., 1980.

7.0 **COMPETENCY/SKILL:** Performs relates duties.

7.3 **TASK:** Coordinates, if necessary, work of assistant press operators.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a number of jobs to run simultaneously on different presses,

EVALUATION: coordinates, if necessary, work of assistant press operators.

STANDARD: All jobs will be produced on schedule and will conform to specifications.

STUDENT LEARNING EXPERIENCES:

1. Review the job specifications of two or more printing jobs and match them with the known press skills of two or more press operators.

2. Assign two or more printing jobs to two or more press operators, review the job specifications with those press operators until assured that the operators are prepared to produce them correctly, and initiate production.

3. Monitor the production output and quality of assigned printing jobs to assure that assistant press operator production will fulfill all job ticket specifications by the deadline.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on leadership in the workplace and the benefits of accepting and performing successfully in roles of responsibility. Discuss techniques for monitoring and directing the work of others.

2. Create production teams for specific groups of projects and have each team member act as leader in the process of organizing a workflow scheme to accomplish production.

3. Act as a leader in directing the production of a group of specific printing jobs on a schedule and monitor and evaluate the performance of the other members of the group to assure the conformance and quality of the finished product.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

Two or more offset presses, all the necessary materials and supplies to produce four or more specific jobs of printing.

RESOURCES:

DeJidas, Lloyd and Eldred, Nelson, R. SOLVING SHEETFED OFFSET PRESS PROBLEMS Graphic Arts Technical Foundation, Pittsburg, PA., 1987.

Staff Author PRESSROOM: REDUCING SPOILAGE AND WASTE DEMANDS CLOS, CONSTANT MONITORING AND AN EYE FOR DETAL Americal Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 199, No. 1; pp. 92-93, 1987.

7.0 **COMPETENCY/SKILL:** Performs related duties.

7.4 **TASK:** Demonstrates responsibility for press production and quality control.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular printing job to produce, job ticket specifications, necessary supplies, standard stock overage, color match samples, and a production deadline.

EVALUATION: demonstrates responsibility for press production and quality control.

STANDARD: The finished printing job will conform to all job ticket specifications, including specified quantity and color match, by the production deadline.

STUDENT LEARNING EXPERIENCES:

1. Consult with the instructor to create a production deadline for a specific printing job; ask for and discuss <u>all</u> information necessary to prepare and produce the job on schedule.

2. Schedule press time and requisition supplies and materials in advance of actual press production.

3. Print job using all appropriate techniques for evaluating and maintaining quality and all other job ticket specifications; present job for instructor's evaluation and/or customer pick-up by scheduled deadline.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Assign specific responsibilities for the production of specific printing jobs and/or student printing projects and require each student to consult before initiating production to resolve all questions about job specifications and to set a production deadline.

2. Create a schedule for each offset press in the training environment on which each student signs up for production time; require each student to accept responsibility for the use of own scheduled time and to log time-on and time-off of each offset press that is used.

3. Call for presentation of each printing job at the deadline if the student hasn't already presented it. Critique each job against the job ticket criteria and challenge each student to explain any variation from the job ticket specifications.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

One ore more offset presses, specific printing jobs with job tickets, all necessary materials and supplies necessary to produce those jobs.

RESOURCES:

ANNOTATED BIBLIOGRAPHY

BOOKS

Bureau, William H. WHAT THE PRINTER SHOULD KNOW ABOUT PAPER. Graphic Arts Technical Foundation, Pittsburghh, PA., 1982.

This text provides an understanding of paper; its manufacture, the various types and individual properties of papers, and their relationship to printing processes.

Crowhurst, Les and Peter Burton. SMALL OFFSET: PREPARATION AND PRESS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1983.

This text describes the full range of small offset printing and production operations.

DeJidas, Lloyd P. and Nelson R. Eldred. SOLVING SHEETFED OFFSET PRESS PROBLEMS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1987.

This text provides solutions for common and uncommon problems in the operation of the press. The information is cataloged and classified by location of press systems.

Eldred, Nelson R. SOLVING OFFSET INK PROBLEMS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1987.

This text provides information and solutions to ink-related problems with a location classified reference system.

Hartsuch, Paul J. CHEMISTRY FOR THE GRAPHIC ARTS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1979 (classic).

This text provides a comprehensive source of information about paper, ink and fountain solution chemistries.

Lavi, Abrahim and George W. Jorgensen LITHOGRAPHIC PRESSMAN'S HANDBOOK. Graphic Arts Technical Foundation, Pittsburgh, PA., Revised 1977 (classic).

This text identifies 43 print quality flaws and lists possible causes and remedies for them.

Porter, A.S. LITHOGRAPHIC PRESSWORK. Graphic Arts Technical Foundation, Pittsburgh, PA., 1980.

A comprehensive text reference book for the users of lithographic presses.

Scarlett, Terry and Nelson R. Eldred WHAT THE PRINTER SHOULD KNOW ABOUT INK. Graphic Arts Technical Foundation, Pittsburgh, PA., 1984.

This text provides a comprehensive reference to the characteristics and uses of offset printing inks.

Strock, Louis D. SAFETY PRACTICES FOR THE GRAPHIC ARTS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1984.

This text provides a comprehensive reference manual for implementing safe procedures in the pressroom and press operations.

Walker, John R. GRAPHIC ARTS FUNDAMENTALS. pp. 128-129, 132-135, 137-139, 141-145. Goodheart-Willcox Company, Inc., South Holland, IL., 1986.

This text chapter provides basic information on the set-up and operation of small offset presses.

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ARTICLES

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Cozart, Jerome X. and Lloyd P. DeJidas. IMAGE CONTROL MARKS SYSTEM. Graphic Arts Technical Foundation, Pittsburgh, PA., 1981.

This Technical Services Report describe the use of side-guide marks for control and evaluation of sheet-to-sheet register.

DeJidas, Lloyd P. and Harvey R. Levenson. MAINTAINING PRODUCTION WITH SUBSTITUTE MATERIALS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1974 (classic).

This report offers suggestions for the effective use of substitute materials while avoiding excessive waste or downtime.

Eldred, Nelson R. CUTTING DOWN ON SPRAY POWDER. Graphic Arts Technical Foundation, Pittsburgh, PA., 1985.

This Technical Services Report describes the efficient use of anti-offset spray powder to prevent ink set-off in the delivery pile.

Eldred, Nelson R. INFRARED DRYING AND SETTING OF INKS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1979.

This Technical Services report describes the use of infrared dryers and inks to avoid set-off and ink drying problems.

Elyjiw, Zenon. GATF COMPACT COLOR TEST STRIP: RESEARCH PROJECT REPORT. Graphic Arts Technical Foundation, Pittsburgh, PA., 1985.

This report discusses the use of a test strip designed to allow measurement and control of the variables involved in color lithographic printing.

Field, Gary G. USING THE REFLECTION DENSITOMETER FOR INK FILM CONTROL. Graphic Arts Technical Foundation, Pittsburgh, PA., 1972 (classic).

This report presents proper techniques for the use of the pressroom reflection densitometer.

GATF REVIEWS SOLUTIONS TO PAPER-GENERATED HICKEYS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1970. (classic)

This Technical Services Report discusses the problems, symptoms and resolution of image flaws caused by paper-generated hickeys.

Geis, A. John. CONTROLLING THE QUALITY OF PRESSROOM MATERIALS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1980.

This report presents information on the proper handling, storage and quality assessment of pressroom supplies and printing papers.

Geis, A. John. SHEET-FED PRESS PREVENTIVE MAINTENANCE. Graphic Arts Technical Foundation, Pittsburgh, PA., 1982.

This report describes the essential steps for installing a preventive maintenance program in the pressroom.

German, Charles R. PRINTING WITH A SMALL LITHOGRAPHIC OFFSET PRESS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1980.

A Learning Module in six lessons which guide the student in every phase of operating and printing with a small offset press.

Grace, Gregory W. SHEET CONTROL FOR A SMALL LITHOGRAPHIC OFFSET PRESS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1978 (classic)

This Learning Module stresses safety and effective technique in the set up of the small press feeder system.

Hull Harry H. CONTROLLING INK DISTRIBUTION IN LITHOGRAPHY AND LETTERPRESS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1972. (classic)

This Research Project Report discusses reasons for variations in ink film and its measurement and control.

Jorgensen, George W. CONTROL OF COLOR ON PRESS: HALFTONES. Graphic Arts Technical Foundation, Pittsburgh, PA., 1984.

This report presents information on variables and control measures for halftone reproduction.

Jorgensen, George W. CONTROL OF COLOR ON PRESS: OVERPRINTS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1983.

This report discusses the color and optical properties of overprinted ink film layers and their control during the pressrun.

Jorgensen, George W. CONTROL OF COLOR ON PRESS: SINGLE INK FILM LAYERS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1982.

The color properties of single ink film layers and their control during the pressrun.

Jorgensen, George W. CONTROL OF COLOR REGISTER Graphic Arts Technical Foundation, Pittsburgh, PA., 1982.

This report provides guidelines for setting control limits for color mis-register during the pressrun.

Jorgensen, George W. CONTROL OF INK-WATER BALANCE. Graphic Arts Technical Foundation, Pittsburgh, PA., 1981.

This report discusses a technique for the efficient control of ink-water balance during the pressrun.

Jorgensen, George W. CONTROL OF PRESS SHEET SPOTS AND PATTERNS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1985.

This report describes a variety of image flaws that can occur during the pressrun and offers solutions to control them.

Jorgensen, George W. SIMPLIFIED PRESS CONTROL SYSTEM. Graphic Arts Technical Foundation, Pittsburgh, PA., 1986.

This report presents strategies to reduce "trial and error" in selecting and applying press adjustments.

Jorgensen, George W. and Abrahim Lavi. PRESS INTERACTIONS CHART. Graphic Arts Technical Foundation, Pittsburgh, PA., 1969 (classic).

This report charts the high degree of interdependence of press outputs on the many press control inputs.

Levenson, Harvey R. PREVENTIVE QUALITY CONTROL: SHEETFED PRESSROOM. Graphic Arts Technical Foundation, Pittsburgh, PA., 1971 (classic).

This report defines a system for the prevention of errors in pressroom operations and quality flaws in print production.

Olinghouse, Lane. CLEANING UP IN WASHUP. Printing Impressions; North American Publishing Company, Philadelphia, PA., Vol. 29, No. 9; pg. 57, 1987.

An article detailing the importance of good technique during press washup to save time and reduce costs during production and equipment maintenance.

Olinghouse, Lane. THE FOUNTAIN OF SOLUTIONS. Printing Impressions; North American Publishing Company, Philadelphia, PA., Vol. 29, No. 11; pg. 52, 1987.

An article which describes the basic types of fountain solutions, their use and the problems associated with them in offset dampening systems.

PRESSROOM: CATCHUP SCUM CAN BE ELIMINATED ON AN OFFSET PRESS BY ADDING MOISTURE AND TAKING PROPER CARE OF COMPONENTS. American Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 198, No3. pg. 106, 1986.

This article discusses the causes and remedies for plate scumming during press runs.

PRESSROOM: INK FILM THICKNESS MUST BE CONTROLLED TO MAINTAIN PROPER INK-WATER BALANCE. American Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 198, No. 4; pp. 58-59, 1987.

This article discusses the dynamic interaction between the ink film thickness on the ink roller and plate, and the response of the dampening system and solution to excessive ink film thickness.

PRESSROOM: REDUCING SPOILAGE AND WASTE DEMANDS CLOSE, CONSTANT MONITORING AND AN EYE FOR DETAIL. American Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol.., 199, No. 1; pp. 92-93, 1987.

This article discusses techniques and strategies for reducing operating waste and the prevention of ruined work in the pressroom.

Principato, Mike A QUESTION OF SAFETY: TOXIC CHEMICALS IN THE PRESSROOM. American Printer; Maclean Hunter Publishing Corporation, Chicago, IL., Vol. 198, No. 6; pp. 52-53, 1987.

This article discusses the common toxic chemicals in use in the modern pressroom and their proper handling and disposal.

Reed, Robert F. and Nelson R. Eldred PAPER, RELATIVE HUMIDITY AND COLOR REGISTER. Graphic Arts Technical Foundation, Pittsburgh, PA., 1962 revised 1985.

This report details the effect of environmental relative humidity to the moisture content of printing papers and its effect on color register during press runs.

Smith, Paul G. PLATE MOUNTING ON THE OFFSET PRESS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1985.

This learning module in eight lessons details proper plate preparation, packing and mounting techniques for the offset plate.
Smith, Paul G. SHEET CONTROL ON THE OFFSET PRESS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1981.

This learning module in five lessons provides a guide for press set-up to achieve accurate sheet control during press runs.

AUDIOVISUALS (35mm SLIDE SHOWS, classic-techniques have not changed)

Benevento, Frank S. CYLINDER ALIGNMENT AND ADJUSTMENTS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1970.

Shows procedures for the critical adjustment of cylinder pressures in offset presses.

Benevento, Frank S. OFFSET PRESS CYLINDER PACKING. Graphic Arts Technical Foundation, Pittsburgh, PA., 1970.

Shows practical techniques for evaluating and changing cylinder diameters by packing under plate or blanket.

Benevento, Frank S. THE OFFSET PRINTING UNIT. Graphic Arts Technical Foundation, Pittsburgh, PA., 1970.

Explains the main functions of the components of an offset press printing unit, their use, adjustment and maintenance.

Benevento, Frank S. PRINTING UNIT CONFIGURATIONS. Graphic Arts Technical Foundation, Pittsburgh, PA., 1970.

Shows the basic configurations of printing and transfer cylinders for several types of single color and multi-color presses.

UNDERSTANDING AND MEASURING pH. Graphic Arts Technical Foundation, Pittsburgh, PA., 1973.

Demonstrates the concept and measurement of the tools used to measure it.

COMPETENCY/SKILL AND TASK LIST
LITHOGRAPHIC PLATEMAKER

1. Consults job ticket and organize work flow.
   - 1.1 Inspects flats for problems in platemaking & defects.
   - 1.2 Sorts flats to be exposed and make production sequence.
   - 1.3 Selects plate: size and type

2. Exposes, process & preserve a pre-sensitized additive plate.
   - 2.1 Checks for correct exposure, processing techniques & chemistry.
   - 2.2 Correctly positions flat(s) & plate in register in exposure unit.
   - 2.3 Checks position & contact of flat(s) & plate(s) and expose.
   - 2.4 Processes plate according to specifications.
   - 2.5 Inspects & correct as necessary.
   - 2.6 Preserves plate according to specifications.
   - 2.7 Mars, labels or files plate.

3. Exposes, processes & preserves a pre-sensitized subtractive plate.
   - 3.1 Checks for correct exposure, processing techniques & chemistry.
   - 3.2 Correctly positions flat(s) & plate in register in exposure unit.
   - 3.3 Checks position & contact of flat(s) & plate(s) and expose.
   - 3.4 Processes plate according to specification.
   - 3.5 Inspects & corrects as necessary.
   - 3.6 Preserves plate according to specification.
   - 3.7 Marks, labels, or files plate.

4. Exposes, process & preserve other required plate materials.
   - 4.1 Exposes electrostatic plates.
   - 4.2 Exposes and processes photodirect plates.
   - 4.3 Exposes and processes diffusion transfer plates.

5. **Steps, & repeats plate exposure.**
   - 5.1 Calculates & locate correct exposure positions.
   - 5.2 Steps & repeats exposure of plate with single image film.
   - 5.3 Processes plate according to specifications.
   - 5.4 Inspects & corrects as necessary.
   - 5.5 Preserves plate according to specifications.
   - 5.6 Marks, labels, or files plate.

6. **Performs troubleshooting.**
   - 6.1 Identifies problem.
   - 6.2 Analyzes problem.
   - 6.3 Selects best solution.
   - 6.4 Implements solution.
   - 6.5 Analyzes & accepts or rejects results.

7. **Performs maintenance.**
   - 7.1 Cleans and lubricates on a scheduled basis and as necessary.
   - 7.2 Accomplishes minor repairs.
   - 7.3 Maintains a neat, clean and safe working environment.

8. **Performs related duties.**
   - 8.1 Communicates and coordinates work with other production personnel.
   - 8.2 Maintains inventory of necessary supplies and materials.
   - 8.3 Demonstrates responsibility for plate production and quality control.

1.0 COMPETENCY/SKILL: Consults job ticket and organize work flow.

1.1 TASK: Inspects flats for defects and problems in platemaking.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a job ticket and file for a specified printing job,

EVALUATION: inspects the flats for defects and problems in platemaking.

STANDARD: All flats with defects and problems will be identified; those not usable will be removed to be corrected.

STUDENT LEARNING EXPERIENCES:

1. List defects and problems in platemaking.
2. Identify those flats with defects.
3. Write the defect(s) on each flat.
4. Correct defects as written.
5. Remove flats that are not correctable.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain deficiencies found when checking flats before platemaking.

2. Prepare a unit for individual instruction that includes flat(s) with problem(s) to be identified. Student may list possible solutions or may perform the solutions on the defective flat.

3. Explain what deficiencies to look for when checking flats for defects.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, ruler, opaque, #0 or #1 brush, lithographic tape, X-acto knife or scissors.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar publishers Inc., Albany, N.Y., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1987.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

1.0 COMPETENCY/SKILL: Consults job ticket and organize work flow.

1.2 TASK: Makes production sequence by sorting flats to be exposed.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given the job ticket and file for a specified printing job,

EVALUATION: makes production sequence by sorting flats to be exposed.

STANDARD: All flats needed to produce the job will be selected. Flats will be sorted into a production sequence. Flats not needed will be returned to the file.

STUDENT LEARNING EXPERIENCES:

1. Review various methods of sequencing plate exposure.
2. Select correct flats for specified job.
3. Sort flats according to correct exposure sequence.
4. Return unneeded flats to job file.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on flat sequencing for exposure that could include single side, two sided, multiple burn (screen tints, etc.) and multiple color.

2. Demonstrate flat sequence for exposure with job(s) that are in the shop to be printed.

3. Prepare a unit (or units) for individual instruction specifying how to sort flats and make a production sequence. The unit(s) could include single side, two-sided (work and turn or work and tumble), multiple color, and multiple burn (screen tints, etc.).

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

Job ticket and file with flats to be sorted.

RESOURCES:

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6)

1.0 **COMPETENCY/SKILL:** Consults job ticket and organize work flow.

1.3 **TASK:** Selects plate: size and type.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a job ticket with the job file and access to plate storage,

EVALUATION: selects correct size and type of plate.

STANDARD: The plate will be the correct size to fit on the assigned press and will be the correct type for the run length of the job.

STUDENT LEARNING EXPERIENCES:

1. Read job ticket instructions to determine which press the job is to be run on.
2. Refer to the press operator's manual to see what size plate to use.
3. Read the job ticket instructions to see what the run length of the job is.
4. Determine correct plate by the press type, and length of run.
5. Write the correct plate type on the job ticket.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Show the types of plates available for use in the lab.

2. Explain the run length of the plates available in the lab.

3. Assign textbook unit of instruction on types of plates and run lengths.

4. Hand out prepared list of plates used in lab and their respective run lengths and recommendations for use.

5. Consult plate manufacturer's information sheet for size and run length.

6. Consult press operator's manual for size of plate to use.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Press operator's manual, manufacturer's information sheet with plates used in lab, textbook, job ticket and file.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

2.0 **COMPETENCY/SKILL:** Exposes, processes & preserves a pre-sensitized additive plate.

2.1 **TASK:** Checks for correct exposure, processing techniques and chemistries.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file, access to plate storage, and chemistry storage,

EVALUATION: checks for correct exposure, processing techniques and chemistries.

STANDARD: Write on the job ticket the proper exposure time and chemistry to use with the specified plate.

STUDENT LEARNING EXPERIENCES:

1. Look on the job ticket for correct plate size and type.
2. Consult plate manufacturer's sheet for correct exposure time and processing chemistry.
3. Write correct exposure time on job ticket.
4. Write correct chemistry on job ticket.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss where to find information concerning plate exposure times, processing techniques and chemistries used.

2. Show how to find plate exposure times, processing techniques, and use of chemistries.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, access to plate storage, access to chemistry storage, and textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3., 1979.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

2.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a pre-sensitized additive plate.

2.2 **TASK:** Correctly positions flat(s) and plate in register in exposure unit.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and job file, access to plate storage, and plate exposure unit,

EVALUATION: correctly positions flat(s) and plate(s) in register in exposure unit.

STANDARD: Correctly register flat(s) on plate(s) in exposure unit.

STUDENT LEARNING EXPERIENCES:

1. Remove flat to be exposed from job file.
2. Select correct plate from plate storage.
3. Demonstrate correct safety methods when handling plates.
4. Place plate on exposure unit with light sensitive side up.
5. Place flat on top of plate in correct register.
6. Close exposure unit contact glass.
7. Turn on vacuum pump.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate the correct method for: removing a plate from its package; for registering the flat to the plate; for closing the vacuum frame glass and turning on the vacuum pump.

2. Show how to register a flat with a plate and turn on the vacuum pump.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and job file; access to plate storage and plate exposure unit.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

2.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a presensitized additive plate.

2.3 **TASK:** Checks position and contact of flat(s) and plate(s); expose.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given flat(s) and plate(s) positioned in register in exposure unit with vacuum turned on,

EVALUATION: checks position and contact of flat(s) and plate(s); expose.

STANDARD: Check for correct register of flat to plate. When correct register is determined, turn on exposure unit for correct exposure.

STUDENT LEARNING EXPERIENCES:

1. Check flat(s) and plate(s) to see that they are in correct register after the vacuum gauge indicates all air is out of vacuum frame.

2. Correct if not in register.

3. Turn on exposure unit to expose the plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to check register of flat(s) and plate(s) before exposing plate.

2. Demonstrate how to check flat/plate register and expose plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Plate exposure unit with flat(s) and plate(s) correctly aligned and registered with contact glass closed and vacuum pump on.

Plate exposure unit operator's manual.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-764440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3., 1979.

2.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a pre-sensitized additive plate.

2.4 **TASK:** Processes plate according to specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given pre-exposed plate(s), access to chemistry, sink with running water, and plate manufacturer's instruction sheet and/or textbook.

EVALUATION: processes plate according to specifications.

STANDARD: Process plate(s) following the instructions given for processing an additive plate.

STUDENT LEARNING EXPERIENCES:

1. Remove plate from plate exposure unit and take to the plate processing sink.

2. Select the correct chemistry for processing a pre-sensitized additive plate.

3. Process the plate(s) following the instructions given for processing a pre-sensitized additive plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss how to use the correct chemistry and techniques when processing a pre-sensitized additive plate.

2. Demonstrate the correct chemistry and technique to use when processing a pre-sensitized additive plate.

3. Prepare a unit for individual instruction specifying how to process a pre-sensitized additive plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

Plate sink; exposed, pre-sensitized additive plate(s); access to chemistry; plate manufacturer's instruction sheet; textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

2.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a presensitized additive plate.

2.5 **TASK:** Inspect and correct as necessary.

PERFORMANCE OBJECTIVE:

CONDITIONS: **Given a processed additive plate(s),**

EVALUATION: inspects and corrects as necessary.

STANDARD: Inspect and correct a processed additive plate as specified on the plate manufacturer's information sheet and/or student's textbook.

STUDENT LEARNING EXPERIENCES:

1. Look for flaws in the image areas of the plate.
2. Look for flaws in the non-image areas of the plate.
3. Correct the plates that are flawed and are correctable.
4. Remove the plates that are flawed and cannot be corrected.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss what flaws to look for when inspecting a processed additive plate.

2. Show flawed plates and discuss how flaws could have been eliminated.

3. Prepare a unit for individual instruction specifying how to inspect and/or correct a flawed plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Processed additive plate, textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

2.0 **COMPETENCY/SKILL:** Exposes, processs and preserves a pre-sensitized additive plate.

2.6 **TASK:** Preserve plate according to specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a correctly processed additive plate(s),

EVALUATION: preserves the plate(s) according to specifications.

STANDARD: Plate will have an even coating of preservtive on it's surface with no parts uncovered.

STUDENT LEARNING EXPERIENCES:

1. Select the correct preservative for the additive plate.
2. Apply the preservative in the correct manner so the entire plate surface is covered.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain the correct method of preserving an additive plate.

2. Demonstrate the correct method of preserving an additive plate.

3. Prepare a unit of instruction specifying how to preserve an additive plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Processed additive plate(s), correct preservative, area to work on, cotton pads or equivalent.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

2.0 COMPETENCY/SKILL: Exposes, processes and preserves a pre-sensitized additive plate.

2.7 TASK: Mark, label or file plate.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a processed, preserved additive plate,

EVALUATION: marks, labels or files plate.

STANDARD: Plate to be marked, labeled, or filed according to job ticket instructions.

STUDENT LEARNING EXPERIENCES:

1. Consult job ticket to see how to mark, label or file plate when plate has been correctly preserved.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to follow plate marking instructions on the job ticket.

2. Demonstrate how to mark, label, or file plate according to instructions on the job ticket.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, completed additive plate ready for marking, labeling, or filing.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

3.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a presensitized subtractive plate.

3.1 **TASK:** Check for correct exposure, processing techniques and chemistry.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file, access to plate storage, and chemistry storage,

EVALUATION: checks for correct exposure, processing techniques and chemistries.

STANDARD: Write on the job ticket the correct exposure time and chemistry to use with the specified plate.

STUDENT LEARNING EXPERIENCES:

1. Consult the job ticket for correct plate size and type.
2. Locate exposure time for given plate.
3. Write correct exposure time on job ticket.
4. Write correct chemistry on job ticket.
5. Explain to the Instructor the correct processing technique.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss where to find information concerning plate exposure times, processing techniques, and chemistries used.

2. Show how to find plate exposure times, processing techniques, and use of chemistries.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, access to plate storage, access to chemistry storage, and textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

3.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a presensitized subtractive plate.

3.2 **TASK:** Correctly positions flat(s) and plate(s) in register in exposure unit.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and job file, access to plate storage, and plate exposure unit,

EVALUATION: correctly positions flat(s) and plate(s) in register in exposure unit.

STANDARD: Correctly register flat(s) on plate(s) on exposure unit.

STUDENT LEARNING EXPERIENCES:

1. Remove flat to be exposed from job file.
2. Select correct plate from plate storage.
3. Demonstrate correct safety methods when handling plates.
4. Place plate on exposure unit with light sensitive side up.
5. Place flat on top of plate in correct register.
6. Close exposure unit contact glass.
7. Turn on vacuum pump.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate the correct method for: removing a plate from its package; for registering the flat to the plate; for closing the vacuum frame glass and turning on the vacuum pump.

2. Show how to register a flat with a plate and turn on the vacuum pump.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and job file, access to plate storage and plate exposure unit.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

3.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a presensitized subtractive plate.

3.3 **TASK:** Checks position and contact of flat(s) and plate(s); expose.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given flat(s) and plate(s) positioned in register in exposure unit with vacuum turned on,

EVALUATION: checks position and contact of flat(s) and plate(s); expose.

STANDARD: Check for correct register of flat to plate. When correct register is determined, turn on exposure unit for correct exposure.

STUDENT LEARNING EXPERIENCES:

1. Check flat(s) and plate(s) to see that they are in correct register after the vacuum gauge indicates all air is out of the vacuum frame.

2. Correct if not in register.

3. Turn on exposure unit to expose the plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to check register of flat(s) to plate(s) before exposing plate.

2. Demonstrate how to check flat/plate register and expose plate.

3. Assign student plate exposure operator's manual to study and be able to tell or show instructor how to check and expose a plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Plate exposure unit with flat(s) and plate(s) correctly registered, with contact glass closed, and vacuum pump on.

Plate exposure unit operator's manual.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

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Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

3.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a pre-sensitized subtractive plate.

3.4 **TASK:** Processes plate according to specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given pre-exposed plate(s), access to chemistry, sink with running water, and plate manufacturer's instruction sheet and/or textbook,

EVALUATION: processes plate according to specifications.

STANDARD: Process plate(s) following the instructions given for processing a subtractive plate.

STUDENT LEARNING EXPERIENCES:

1. Remove plate from plate exposure unit and take it to the plate processing sink.

2. Select the proper chemistry for processing a pre-sensitized subtractive plate.

3. Process the plate(s) following the instructions given for processing a pre-sensitized subtractive plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate how to use the correct chemistry and techniques when processing a pre-sensitized subtractive plate.

2. Discuss how to use the correct chemistry and techniques when processing a pre-sensitized subtractive plate.

3. Prepare a unit for individual instruction specifying how to process a pre-sensitized subtractive plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Plate sink; exposed, pre-sensitized subtractive plate(s); access to chemistry; plate manufacturer's instruction sheet; student's textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

3.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a pre-sensitized subtractive plate.

3.5 **TASK:** Inspects and corrects as necessary.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a processed subtractive plate(s),

EVALUATION: inspects and corrects as necessary.

STANDARD: Inspect and correct a processed subtractive plate as specified on the plate manufacturer's information sheet and/or student's textbook.

STUDENT LEARNING EXPERIENCES:

1. Look for flaws in the image areas of the plate.
2. Look for flaws in the non-image areas of the plate.
3. Correct the plate(s) that are flawed and are correctable.
4. Remove the plate(s) that are flawed and cannot be corrected.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss what flaws to look for when inspecting a processed subtractive plate.

2. Show flawed plates and discuss how flaws could have been eliminated.

3. Prepare a unit for individual instruction specifying how to inspect and/or correct a flawed plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Processed subtractive plate, textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

3.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a presensitized subtractive plate.

3.6 **TASK:** Preserves plate according to specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a properly processed subtractive plate(s),

EVALUATION: preserves the plate(s) according to specifications.

STANDARD: Plate will have an even coating of preservative on its surface with no parts uncovered.

STUDENT LEARNING EXPERIENCES:

1. Select the correct preservative for the subtractive plate.

2. Apply the preservative in the correct manner so the entire plate surface is covered.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain the correct method of preserving a subtractive plate.

2. Demonstrate the correct method of preserving a subtractive plate.

3. Prepare a unit of instruction specifying how to preserve a subtractive plate.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Processed subtractive plate(s), correct preservative, area to work on, cotton pads or equivalent.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

3.0 **COMPETENCY/SKILL:** Exposes, processes and preserves a presensitized subtractive plate.

3.7 **TASK:** Marks, labels or files plate.

PERFORMANCE OBJECTIVE:

CONDITIONS: Give a processed, preserved subtractive plate,

EVALUATION: marks, labels or files plate.

STANDARD: Plate to be marked, labeled, or filed according to job ticket instructions.

STUDENT LEARNING EXPERIENCES:

1. Consult job ticket to see how to mark, label or file plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to follow plate marking instructions on the job ticket.

2. Demonstrate how to mark, label, or file the plate according to instructions on the job ticket.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, completed subtractive plate ready for marking, labeling, or filing.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

4.0 **COMPETENCY/SKILL:** Exposes, processes and preserves other required plate materials.

4.1 **TASK:** Exposes electrostatic plates.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file, an electrostatic platemaker, and access to the necessary supplies and materials,

EVALUATION: exposes an electrostatic plate.

STANDARD: A correctly exposed electrostatic plate will have a solid tone in the image area and not tone in the non-image area.

STUDENT LEARNING EXPERIENCES:

1. Explain verbally to the instructor the electrostatic platemaking process.

2. Place original on the electrostatic platemaker in the correct position.

3. Set master length and tone density to the desired settings, and expose.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate the correct procedures for making an electrostatic plate.

2. Assign textbook and/or other materials on electrostatic platemaking.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Electrostatic platemaker, necessary supplies and materials, job ticket and file, textbook, and other materials on electrostatic platemaking.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

4.0 **COMPETENCY/SKILL:** Exposes, processes and preserves other required plate materials.

4.2 **TASK:** Exposes and processes photo-direct plates.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file, photo-direct plate making equipment, and access to necessary supplies and materials.

EVALUATION: exposes and processes photo-direct plates.

STANDARD: A correctly exposed and processed photo-direct plate will meet manufacturer's suggested standards.

STUDENT LEARNING EXPERIENCES:

1. Explain verbally to instructor the photo-direct plate process.

2. Place original on platemaker in specified location.

3. Set percentage of reduction/enlargement, lens opening, plate length, and length of exposure to the correct settings, and expose.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate the correct procedures for making a photo-direct plate.

2. Assign textbook and/or other materials on photo-direct platemaking.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Photo-direct platemaker, necessary supplies and materials, job ticket and file, other material, and textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

4.0 **COMPETENCY/SKILL:** Exposes, processes and preserves other required plate materials.

4.3 **TASK:** Exposes and processes diffusion transfer plates.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file, diffusion transfer platemaking equipment, and access to necessary supplies and materials,

EVALUATION: exposes and processes diffusion transfer plates.

STANDARD: A correctly processed diffusion transfer plate will meet manufacturer's suggested standards.

STUDENT LEARNING EXPERIENCES:

1. Explain verbally to instructor the diffusion transfer process.

2. Place original on exposure unit in correct position, and expose.

3. Process plate according to manufacturer's recommended procedures.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate the correct procedures for exposing and processing diffusion transfer plates.

2. Assign textbook and/or other materials on the diffusion transfer process.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Process camera or exposure unit, diffusion transfer processor, necessary supplies and materials, job ticket and file, textbook, and other materials.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

5.0 **COMPETENCY/SKILL:** Steps and repeats plate exposure.

5.1 **TASK:** Calculates and locates correct exposure positions.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file, and access to plate storage,

EVALUATION: calculates and locates correct exposure positions.

STANDARD: Mark plate and/or flat after locating proper xposure positions.

STUDENT LEARNING EXPERIENCES:

1. Choose correct flat and plate for the job.
2. Calculate the correct positions for exposure from information on the job ticket.
3. Mark correct exposure positions on the flat and/or plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate how to step and repeat plate exposure using a single image film stripped on one flat.

2. Show audio-visual unit on step and repeat process.

3. Prepare a unit for individual instruction specifying how to step and repeat plate exposure using a single image film stripped on one flat.

4. Assign textbook material covering the step and repeat process.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, access to plate storage, VCR equipment and tape on the step and repeat process, slide projector and tape player, slide series on the step and repeat process.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

5.0 **COMPETENCY/SKILL:** Steps and repeats plate exposure.

5.2 **TASK:** Steps and repeats exposure of plate with single image film.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file, access to plate storage, plate exposure unit,

EVALUATION: steps and repeats exposure of plate with single image film.

STANDARD: Correctly step and repeat exposure according to the positions marked on the flat and/or plate.

STUDENT LEARNING EXPERIENCES:

1. Correctly align flat with plate for first exposure and make exposure.

2. Correctly align flat with plate for the second and subsequent exposures and make exposure(s) according to job ticket specifications.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to expose a step and repeat job with single image film.

2. Demonstrate how to expose a step and repeat job with single image film.

3. Show an audio-visual unit on the step and repeat process.

4. Prepare a unit for individual instruction specifying how to expose a step and repeat job with single image film.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, access to plate storage, plate exposure unit, audio-visual equipment to show unit(s) of instruction, audio-visual program(s) on step and repeat plate exposure, and textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

5.0 **COMPETENCY/SKILL:** Steps and repeats plate exposure.

5.3 **TASK:** Processes plate according to specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given pre-exposed plate(s), access to chemistry, sink with running water, and plate manufacturer's instruction sheet and/or textbook,

EVALUATION: processes plate according to specifications.

STANDARD: Process plate(s) following the instructions given for specified plate(s).

STUDENT LEARNING EXPERIENCES:

1. Remove plate from plate exposure unit and take to the plate processing sink.

2. Select the correct chemistry for processing the plate.

3. Process the plate following the instructions given for the specific plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss how to use the correct chemistry and techniques when processing pre-sensitized plate(s).

2. Demonstrate the correct chemistry and technique to use when processing pre-sensitized plate(s).

3. Prepare a unit for individual instruction specifying how to process pre-sensitized plate(s).

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Plate sink; exposed, pre-sensitized plate(s); access to chemistry; plate manufacturer's instruction sheet; textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

5.0 **COMPETENCY/SKILL:** Steps and repeats plate exposure.

5.4 **TASK:** Inspects and corrects as necessary.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a processed plate(s),

EVALUATION: inspects and corrects as necessary.

STANDARD: Inspect and correct the processed plate(s) as specified on the plate manufacturer's information sheet and/or student textbook.

STUDENT LEARNING EXPERIENCES:

1. Look for flaws in the image areas of the plate.
2. Look for flaws in the non-image areas of the plate.
3. Correct the flawed plate(s) that are correctable.
4. Remove the flawed plate(s) that cannot be corrected.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss what flaws to look for when inspecting processed plate(s).

2. Show flawed plate(s) and discuss how flaws could have been eliminated.

3. Prepare a unit for individual instruction specifying how to inspect and/or correct a flawed plate(s).

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Processed plate(s), textbook.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain the correct technique of preserving a plate(s).

2. Demonstrate the correct technique of preserving a plate(s).

3. Prepare a unit of instruction specifying how to preserve plate(s).

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Processed plate(s), correct preservative, area to work on, cotton pads or equivalent.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

5.0 COMPETENCY/SKILL: Steps and repeats plate exposure.

5.5 **TASK:** Preserves plate according to specifications.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a correctly processed plate(s),

EVALUATION: preserves the plate(s) according to specifications.

STANDARD: Plate(s) will have an even coating of preservative on its surface with no parts uncovered.

STUDENT LEARNING EXPERIENCES:

1. Select the correct preservative for the plate(s).

2. Apply the preservative with the correct technique so the entire plate surface is covered.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to follow plate marking instructions on the job ticket.

2. Demonstrate how to mark, label, or file plate according to instructions on the job ticket.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, completed plate(s) ready for marking, labeling, or filing.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983.

Offset Printing Plates and their Preparation. Printing Industry of the Carolinas, Charlotte, NC., Pica Slide/Tape unit S6.3, 1979.

5.0 **COMPETENCY/SKILL:** Steps and repeats plate exposure.

5.6 **TASK:** Marks, labels, or files plate.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a processed, preserved plate(s),

EVALUATION: marks, labels or files plate.

STANDARD: Plate(s) are to be marked, labeled, or filed according to job ticket instructions.

STUDENT LEARNING EXPERIENCES:

1. Consult job ticket to see how to mark, label or file plate(s).

6.0 **COMPETENCY/SKILL:** Performs troubleshooting.

6.1 **TASK:** Identifies problem.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file for a specific printing job, and plate(s) that have been marked as "flawed",

EVALUATION: identifies problem.

STANDARD: Each problem causing a "flaw" in the processed plate will be correctly and accurately identified.

STUDENT LEARNING EXPERIENCES:

1. Inspect plate for flaws indicated on job ticket.
2. Look for other flaws that may not have been indicated on the job ticket.
3. List observable flaws found on plate.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Review manufacturer's instruction sheet for plates and/or textbook material concerning problems in platemaking.

2. List flaws found on the plate(s).

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, textbook, manufacturer's instruction sheets for plates.

RESOURCES;

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

6.0 COMPETENCY/SKILL: Performs troubleshooting.

6.2 TASK: Analyzes problem.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file for a specified printing job, flawed plate(s), and the list of flaws,

EVALUATION: analyzes problem.

STANDARD: All of the conceivable causes of the flaws will be examined and evaluated.

STUDENT LEARNING EXPERIENCES:

1. Inspect each flaw found on the plate.
2. List all probable causes of each flaw.
3. Examine each cause for the probability of it being the one responsible for the flaw.
4. Evaluate each cause against the other for a particular flaw, list the most probable cause first, and the remainder in a descending order to the least probable cause.
5. List all probable solutions for each cause.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to analyze a list of probable causes.

2. Prepare a unit for individual instruction that shows how to analyze and evaluate flaws found on plates.

3. Show samples of different flaws encountered in platemaking.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, flawed plates, pencil or pen, paper, textbook, manufacturer's sheets for the particular plate(s) flawed and class notes.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

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6.0 **COMPETENCY/SKILL:** Performs troubleshooting.

6.3 **TASK:** Selects best solution.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file for a specified printing job, flawed plate(s), and the list of flaws with probable causes,

EVALUATION: selects the best solution.

STANDARD: Select the best solution from the list of possible solutions.

STUDENT LEARNING EXPERIENCES:

1. Evaluate each solution against the other for a particular cause.

2. List the most probable solution first, and the remainder in a descending order to the least probable solution.

3. Each flaw will be evaluated n this manner.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to select the best solution by ranking the possible solutions.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, flawed plate(s), and list of flaws with their probable solutions.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

6.0 **COMPETENCY/SKILL:** Performs troubleshooting.

6.4 **TASK:** Implements solution.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file for a specified printing job, flawed plate(s), and the list of probable solutions,

EVALUATION: implements solution.

STANDARD: Correct plate flaw.

STUDENT LEARNING EXPERIENCES:

1. Gather the necessary tools, chemicals, and materials to implement the correction.

2. Make the correction.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to correct plate flaw(s).

2. Show various methods for correcting plate flaws.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, flawed plates, necessary tools, supplies, and materials needed for correcting the flaws.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

6.0 **COMPETENCY/SKILL:** Performs troubleshooting.

6.5 **TASK:** Analyzes and accepts or rejects results.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given job ticket and file for a specified print job, corrected plate(s), the list of possible solutions,

EVALUATION: analyzes and accepts or rejects results.

STANDARD: Examine the corrected plate and accept or reject the correction(s) made.

STUDENT LEARNING EXPERIENCES:

1. Examine the corrected plate.
2. Put an acceptably corrected plate back on line.
3. Re-analyze an unacceptably corrected plate and implement another solution for correction.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to analyze the results of the correction.

2. Show samples of various plate corrections and the printed results of each correction.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket and file, plates with corrected flaws, and the list of possible solutions.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

7.0 **COMPETENCY/SKILL:** Performs maintenance.

7.1 **TASK:** Cleans and lubricates on scheduled basis and as necessary.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given plate exposure unit, processing sink, operators manual(s), production schedule, maintenance lob, and access to necessary tools and supplies,

EVALUATION: cleans and lubricates on scheduled basis and as necessary.

STANDARD: The plate exposure unit and processing sink will be kept correctly lubricated and cleaned on a regular schedule and as necessary due to production.

STUDENT LEARNING EXPERIENCES:

1. List the lubrication points and how often each point is to be lubricated for the lab plate exposure unit.

2. Describe the appropriate cleaning techniques for the plate exposure unit and sink, listing the correct supplies to be used.

3. Maintain appropriate levels of cleanliness and lubrication on a regular scheduled basis.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain how to lubricate and clean the plate exposure unit and processing sink.

2. Show how to correctly lubricate and clean the plate exposure unit and processing sink and the correct documentation in the maintenance log.

3. Use an evaluation tool reflecting how well the student maintains the work area while working on a project and after completion.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Plate exposure unit, processing sink, operator's manual(s), and access to supplies and tools.

RESOURCES:

Operator's Manual and/or Parts Manual for the specified equipment in the Graphics Lab.

7.0 **COMPETENCY/SKILL:** Performs maintenance.

7.2 **TASK:** Accomplishes minor repairs.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given plate exposure unit, processing sink, operator's manual(s), parts manual(s), access to tools, parts needed for repair, production schedule, and maintenance log,

EVALUATION: accomplishes minor repairs.

STANDARD: The assessment and replacement of worn parts will be accomplished on a regular basis. Emergency repairs necessary to meet production deadlines will be accomplished as necessary.

STUDENT LEARNING EXPERIENCES:

1. List the parts that are wearing during regular clean-up and maintenance.

2. Check the operator's manual and/or parts manual for the correct part number.

3. Describe the correct procedures to be used in replacing the part.

4. Replace the part when production schedule permits.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Show, at the plate exposure unit, the correct procedures for evaluating worn parts, their effect on the exposure unit, and the correct procedures for replacement.

2. Explain the function of parts in the plate exposure unit and the effect worn parts have on the quality of plate being exposed.

3. Show what happens when a properly exposed plate is processed in a dirty processing sink.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Plate exposure unit, processing sink, parts manual(s), operator's manual(s), access to tools, supplies, and new part(s).

RESOURCES:

Operator's Manual and/or Parts Manual for the specified equipment in the Graphics Lab.

7.0 **COMPETENCY/SKILL:** Performs maintenance.

7.3 **TASK:** Maintains a neat, clean, and safe working environment.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given plate exposure unit, processing sink, associated work areas, access to necessary tools and supplies,

EVALUATION: maintains a neat, clean and safe working environment.

STANDARD: The platemaking area(s) will be well organized, free from rubbish, dirt, and chemical spills. Approved safety containers will be in constant use, approved fire extinguishers readily available and a fire exit plan posted. The area(s) will be well lighted and ventilated and be free of all known safety hazards.

STUDENT LEARNING EXPERIENCES:

1. Visit a well managed and run commercial printing business and inspect the platemaking area(s). Discuss the orderliness and cleanliness which is observed there.

2. Demonstrate and discuss appropriate procedures to follow in maintaining the laboratory environment in a clean and safe manner.

3. Require each student to follow established procedures for organizing and cleaning the lab equipment. Hold each student accountable for cleaning their work areas and being organized.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

Access to cleaning supplies, tools, and equipment.

RESOURCES:

Operator's Manual and/or Parts Manual for specific equipment in the Graphics Lab.

8.0 **COMPETENCY/SKILL:** **Performs related duties.**

8.1 **TASK:** Communicates and coordinates work with other production workers.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a job ticket and file, production schedule, an established set of quality control standards, and a production staff of co-workers,

EVALUATION: communicates and coordinates work with other production workers.

STANDARD: Discuss with production workers and/or supervisors information necessary to the achievement of production schedules and quality control standards in a prompt and courteous manner without regard to personality conflicts or other personal concerns.

STUDENT LEARNING EXPERIENCES:

1. List and describe the job titles and basic job responsibilities of production workers and/or supervisor(s) found in small, medium and large print shops. Diagram lines of communication necessary to facilitate efficient production.

2. List and describe the categories of information which must always be communicated accurately and promptly to ensure efficient production.

3. Communicate accurately and maintain courteous relationships with other students and the instructor in the performance of all printing projects done in the laboratory.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on job responsibilities, communication procedures, lines or authority and responsibility, and the basics of good business/social relationships related to small, medium and large print shops.

2. Present and review information on the communication of critical production information and the need for constant awareness of quality control and positive customer relations.

3. Discuss the economic impact of production and interpersonal problems of a printing business and security of the production personnel.

4. Practice and apply accurate and timely communication skills and procedures at all times in the instructional environment. Accept personal responsibility for all decisions made in the production of student printing projects.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket(s) and file(s), production schedule, access to platemaking equipment and all necessary supplies and materials.

RESOURCES:

Hailes, William D. and Raymond T. Hubbard. SMALL BUSINESS MANAGEMENT. Delmar Publishing Inc., Albany, NY., 1985.

8.0 COMPETENCY/SKILL: Performs related duties.

8.2 TASK: Maintains an inventory of supplies and materials.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a list of jobs to be completed within a given time, a production schedule, an inventory of supplies and materials on hand,

EVALUATION: maintains an inventory of necessary supplies and materials.

STANDARD: Production schedules will never be delayed because of a lack of necessary supplies and materials.

STUDENT LEARNING EXPERIENCES:

1. Estimate the amount of materials and supplies needed to produce every job on a week's production schedule. The estimate is to specify type and amount of material or supply needed, not dollar value.

2. Check on ordering procedures, order process time, shipping time, and other factors effecting inventory maintenance.

3. Create an inventory maintenance system that can be adjusted to accommodate changing production schedules.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present information on the specific inventory of materials and supplies used in the printing laboratory for the platemaking area and the estimated production to be accomplished during the instructional term. Discuss all factors relating to the maintenance of this inventory.

2. Require students to record their actual usage of material and supplies during project production and to document this usage on a daily basis.

3. Require students to requisition materials and supplies needed to produce printing projects well in advance of the time that they withdraw them from the inventory.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket(s) and file(s), production schedule, access to platemaking equipment and all necessary supplies and materials.

RESOURCES:

Hailes, William D. and Raymond T. Hubbard. SMALL BUSINESS MANAGEMENT. Delmar Publishing Inc., Albany, NY., 1985.

8.0 **COMPETENCY/SKILL:** Performs related duties.

8.3 **TASK:** Demonstrates responsibility for platemaking production and quality control.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a particular printing job to produce, job ticket and file, and access to necessary supplies,

EVALUATION: demonstrates responsibility for platemaking production and quality control.

STANDARD: The processed plate will conform to all job ticket specifications and quality control specifications.

STUDENT LEARNING EXPERIENCES:

1. Consult the job ticket and schedule the platemaking in advance of the job deadline.

2. Requisition supplies and materials in advance of actual plate preparation.

3. Make the plate using the correct technique(s) for evaluating and maintaining quality control.

4. Present the finished plate for the instructor's evaluation by scheduled deadline.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Create a schedule for use of the platemaking equipment and area. Require each student to sign up for use of the area prior to platemaking production.

2. Require each student to accept responsibility for the use of scheduled time and to log time started and time finished on each platemaking job done.

3. Call for each platemaking job at the deadline if the student hasn't already presented it. Critique each job against the job ticket information and challenge each student to explain any variation from the job ticket information.

4. Assign specific responsibilities for platemaking production of specific printing projects. Require each student to resolve all questions about job specifications and set a production deadline before doing any production.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

Job ticket(s) and file(s), production schedule, access to platemaking equipment and all necessary supplies and materials.

RESOURCES:

Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

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Adams, J. Michael and David D. Faux. PRINTING TECHNOLOGY: A MEDIUM OF VISUAL COMMUNICATIONS. Delmar Publishers Inc., Albany, NY., 3rd edition, 1987.

Broekhuizen, Richard J. GRAPHIC COMMUNICATIONS. Glencoe Publishing Company, Encino, CA., 3rd edition, 1988. Organization of book is designed around four concepts of graphic communications: (1) design, (2) image generation, (3) preproduction and production, and (4) binding, finishing, and packaging. Introductory level to the broad field of graphic arts for secondary or post-secondary levels.

Cogoli, John E. PHOTO-OFFSET FUNDAMENTALS. Glencoe Publishing Company, Encino, CA., 5th edition, 1986.

Dennis, Ervin A. and John D. Jenkins. LITHOGRAPHIC TECHNOLOGY. Glencoe Publishing Company, Encino, CA., 1983.

Hailes, William D. and Raymond T. Hubbard. SMALL BUSINESS MANAGEMENT. Delmar Publishing Inc., Albany, NY., 1985. A general management textbook reference.

Graphic Communications Filmstrips with Audio Cassettes, Glencoe Publishing Company, Encino, CA., Platemaking (0-02-674440-6), 1983. Titles include: Overview of Graphic Communications, Graphic Arts Design, Relief Printing, Paper, Photocomposition, Developing a Mechanical, Line Photography, Halftone Photography, Stripping, Platemaking, Offset Lithography, Granure Printing, Screen Process Printing, Screen Process Printing: Photographic Techniques, Finishing, Bookbinding.